

))
)

, 2022

		5
I	.	
	1.	7
	2.	10
	3.	15
	4.	20
	4.1.	20
	4.2.	24
	5.	28
II	,	
	1.	34
	2.	37
	3.	42
	4.	47
	4.1.	47
	4.2.	49
	4.3.	51
	5.	53
III	.	
	1.	59
	2.	61
	3.	67
	4.	73
	4.1.	73
	4.2.	77
	5.	81
IV	.	
	1.	87

2.	89
3.	92
4.	97
4.1.	97
4.2.	101
5.	106

V

1.	112
2.	115
3.	121

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1.8.2022

I

1.

1.

a	4	
a^2		
\sqrt{a}	$\frac{4}{9}$	0,2

2.

x	11	12	$\frac{2}{5}$	$-2\frac{1}{3}$
x^2				

3.

$(-\frac{1}{3})^2 = \frac{1}{9}$			$0,5^2 = 2,5$		
$(\frac{2}{5})^2 = \frac{4}{10}$			$(-0,2)^2 = -0,04$		
$(\frac{3}{5})^2 = \frac{9}{25}$			$(-0,01)^2 = 0,0001$		

4.

$\sqrt{0,9} = 0,3,$ $\sqrt{\frac{4}{9}} = \frac{2}{3},$ $\sqrt{0,001} = 0,1,$
 $\sqrt{1\frac{9}{16}} = 1\frac{3}{4},$ $\sqrt{1,44} = 1,2,$ $\sqrt{0,0004} = 0,02.$

5.

$\sqrt{-5}; \sqrt{7}; \sqrt{12,5}$ $\sqrt{7\frac{1}{2}}?$
 $\sqrt{12}$ $\sqrt{26}?$

6.

$\sqrt{5},$ $\sqrt{21}?$

7.

$\sqrt{<, >} =$

:

$$) 1^2 + 2^2 \underline{\hspace{1cm}} 3^2, \quad) 3^2 + 4^2 \underline{\hspace{1cm}} 5^2, \quad) 6^2 + 7^2 \underline{\hspace{1cm}} 8^2.$$

8.

$$) (2 - 2^2) \cdot (-2), \quad) 9 - 6 \cdot \sqrt{\frac{25}{36}},$$

$$) 2 \cdot (-2)^2 + 2\sqrt{(-2)^2}, \quad) (\sqrt{2})^2 - (-\sqrt{2})^2 + \sqrt{2} \cdot \sqrt{2}.$$

9.

$$) 2 \cdot (-5)^2 - 5 \cdot 2^2, \quad) 5 \cdot (-4)^2 - 4 \cdot 5^2,$$

$$) 4\sqrt{49} - 3\sqrt{169}, \quad) 2\sqrt{81} - 7\sqrt{21}.$$

10.

$$) 0,1^2 \quad \sqrt{0,01}, \quad) \sqrt{0,04} \quad 0,4^2,$$

$$) \sqrt{1 + \frac{9}{16}} \quad (1 + \frac{3}{4})^2, \quad) \sqrt{2 - \frac{1}{25}} \quad (2 - \frac{1}{5})^2.$$

11.

$$) -3 \leq x \leq 3, \quad) -4 < x \leq 5. \quad x$$

12.

$$) \frac{5}{3} \cdot \sqrt{3 - \frac{11}{25}} + \sqrt{1,96}, \quad) \sqrt{1,44} - \frac{7}{5} \cdot \sqrt{2 - \frac{17}{49}}.$$

13.

$$) \frac{5^2}{3} - \frac{5}{3^2} - (\frac{4}{3})^2, \quad) (\frac{2}{5})^2 - \frac{2}{5^2} + \frac{2^2}{5}.$$

14.

$$) (-3)^2 + 4^2 - 5^2, \quad) (\frac{3}{4})^2 - \frac{3^2}{4} + \frac{3}{4^2}, \quad) 1,5^2 - 0,5^2 + 2,5^2.$$

15.

$$: \sqrt{25} + \sqrt{36} - \sqrt{100}.$$

16.

$$: -2; -4,6; \sqrt{7}; \sqrt{4}; -\sqrt{9}; \sqrt{5}$$

17.

:

) $-2^2 + (-2)^2 + (\sqrt{2})^2$,) $\frac{2}{3^2} - (-\sqrt{2})^2$.

18.

) $(-\frac{1}{2})^2$,) $-\frac{1}{2^2}$,) $-0,2^2$,) $(-0,2)^2$,
 $\frac{1}{4}$.

19.

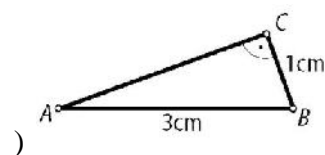
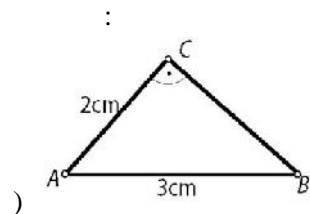
) $x - 2 = -1$,) $x^2 - 1 = 0$,) $1 + 2x + x^2 = 2$.

20.

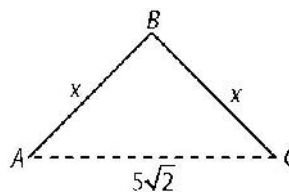
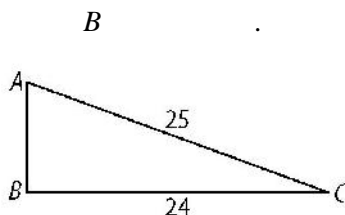
12 cm .

5 cm

21.



22.



23.

$\frac{15}{17}$

34 cm ,

24.)

10 cm

6 cm .

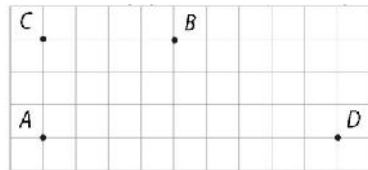
)
 100 cm^2 .

25. 30 cm ,
 $\frac{5}{3}$

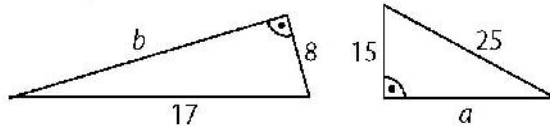
26. ABC
 $\angle ACB = 90^\circ$, $AC = 6 \text{ cm}$ $BC = 8 \text{ cm}$.

27. AB CD

1 cm .

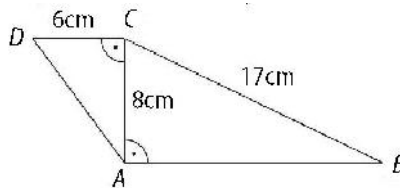


28.



29.

$ABCD$



2.

30. $\sqrt{396}$.
) $9\sqrt{44}$,) $4\sqrt{99}$,) $36\sqrt{11}$,) $6\sqrt{11}$.

40.

$$\sqrt{5}; \sqrt{3 \cdot 4 - 4}; \sqrt{3^2 - 3}; \sqrt{2^2 + 3}; \sqrt{5 \cdot (3 \cdot 1 - 1)}.$$

41.

$$\sqrt{128} + \sqrt{192}$$

) $8\sqrt{5}$;) 25,12;) $\sqrt{320}$;) 24,112.

42.

) $2 \cdot (\frac{1}{2})^2 + (-0,3) : 3^2$,) $\sqrt{0,01} - \frac{1}{2}(\sqrt{0,04} + 2\sqrt{\frac{9}{16}})$.

43.

„ “ „ “

$\sqrt{8} < 3$			$\sqrt{(-5)^2} = 5$		
$-\sqrt{2} + 1 > 0$			$3\sqrt{2} > 5$		

44.

$$(-\frac{2}{3})^2 \cdot (-3)^2 + \sqrt{0,25} \cdot \sqrt{\frac{4}{25}}.$$

45.

) $-\sqrt{15} < -3$,) $\sqrt{24} > 5$,) $-\sqrt{8} > -2$,
) $\sqrt{48} < 7$,) $2\sqrt{7} > 5$,) $3\sqrt{3} < 5$.

46.

) $(\sqrt{\frac{1}{4}} - \sqrt{(-\frac{1}{2})^2}) : \frac{1}{2}$,) $(\sqrt{4} - \sqrt{\frac{1}{4}}) : \frac{1}{3}$,
) $(\frac{1}{5} \cdot \sqrt{0,25} - \sqrt{(-0,3)^2}) \cdot 10$,) $2 \cdot \sqrt{(-\frac{1}{2})^2 + 0,75}$.

47.)

:

$$-\sqrt{10} < \underline{\quad}, \quad \sqrt{39} < \underline{\quad}.$$

)

:

$$-\sqrt{31} > \underline{\quad}, \quad \sqrt{19} > \underline{\quad}$$

48. :
-) $2x^2 - 1 = 7$,) $(x-1)^2 = 1$,) $2(x^2 - \frac{3}{4}) = \frac{1}{2}$,
-) $\frac{2}{3}x^2 + \frac{1}{3} = 1$,) $1 + 3(x+2)^2 = 4$.

49. $a = 4\sqrt{5} \text{ cm}$ $b = 4 \text{ cm}$
 ABC .

50. 15 cm
 9 cm .

51.

48 cm^2 .



52. A

CD N , ABM
 M N 6 cm .
 $ABCD$.

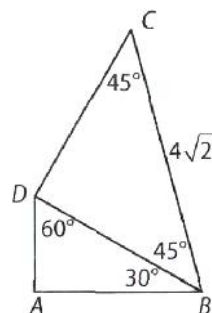
$ABCD$
 BC

53. 30° ,
 6 cm .

54.

60° ,

6 cm .



55.

$ABCD$

56.

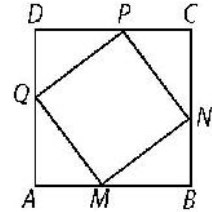
$$4\sqrt{3} \text{ cm}.$$

57.

$$4\sqrt{2} \text{ cm}.$$

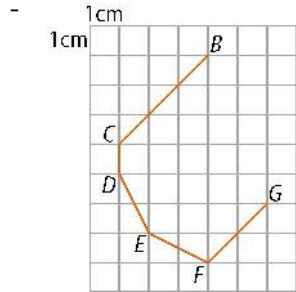
58.

$MNPQ$
 $ABCD$ (). $AM = 0,8 \text{ cm}$ $PD =$
 $1,5 \text{ cm}$,
 $MNPQ$.



59.

$$\sqrt{2} \approx 1,41 \quad \sqrt{5} \approx 2,24$$



60.

)

:
 20 cm ,

)

24 cm

20 cm ,

)

26 cm

10 cm ,

)

18 cm

15 cm .

61.

?

) $14 \text{ cm}, 5 \text{ cm}, 12 \text{ cm}$;

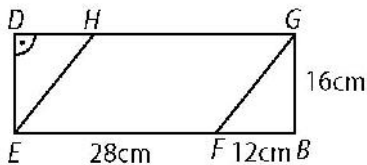
) $15 \text{ cm}, 12 \text{ cm}, 9 \text{ cm}$;

) $10 \text{ cm}, 12 \text{ cm}, 14 \text{ cm}$;

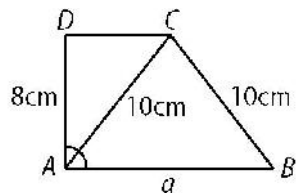
) $11 \text{ cm}, 15 \text{ cm}, 16 \text{ cm}$.

62.

$ABCD$.

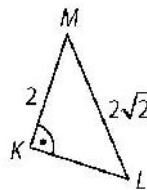
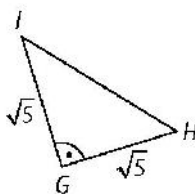
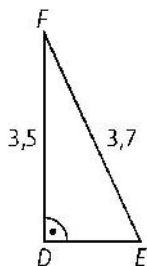


$EFGH$



63.

?



3.

64.

$$9x^2 - \frac{1}{3}y^2$$

$$) x = \sqrt{1 - \frac{5}{9}} \quad y = -3^2,$$

$$) x = \frac{1}{3}\sqrt{7 - \frac{3}{4}} \quad y = 2\sqrt{2 + \frac{1}{4}}.$$

65.

:

$$) 4\sqrt{2} - \sqrt{8} + 8\sqrt{18} - \sqrt{50} + \sqrt{242},$$

$$) \frac{10}{\sqrt{5}} - \sqrt{5},$$

$$) \frac{3}{\sqrt{3}} - \frac{6}{\sqrt{12}}.$$

66.

:

$$) \sqrt{0,1} \cdot \sqrt{0,9} - \sqrt{2 - 0,56} + \frac{\sqrt{0,13}}{\sqrt{3}},$$

$$) \sqrt{2 - 0,79} - \sqrt{0,4} \cdot \sqrt{0,9} - \frac{\sqrt{0,48}}{\sqrt{3}}.$$

67.

:

$$) (\sqrt{20} - \sqrt{45} + \sqrt{125}) \cdot \sqrt{4},$$

$$) \frac{\sqrt{180} - \sqrt{80} + \sqrt{20}}{\sqrt{5}}.$$

68.

$$a = 4(\sqrt{64} - \sqrt{36})\sqrt{64 + 36} \quad b = (\sqrt{64} + \sqrt{36})(\sqrt{64} - \sqrt{36}).$$

69.

$$\sqrt{(7-7 \cdot 2)^2} - 3\sqrt{(x-2)^2} \quad 4 \leq x \leq 5.$$

70.

$$\sqrt{x+2} - \frac{\sqrt{(x-2)^2}}{2} : \sqrt{x^2} + \frac{1}{\sqrt{x}}, \quad x = \frac{1}{4}.$$

71.

$$) \sqrt{5 \cdot \sqrt{(-5)^2}} + \sqrt{(-5)^2 - \sqrt{25^2}}, \quad) 3\sqrt{(2\sqrt{5}-5)^2} - 2\sqrt{(3\sqrt{5}-5)^2}.$$

72.

$$\sqrt{(x-\sqrt{5})^2} - \sqrt{(7-x)^2} - (x-\sqrt{5})(7-x) \quad x = 7 + \sqrt{5}.$$

73.

$$) (-3\sqrt{5})^2 + (3\sqrt{2})^2 - 2(2\sqrt{10})^2, \\) \left(\frac{2}{\sqrt{3}}\right)^2 - 2\left(\frac{1}{2\sqrt{3}}\right)^2.$$

74.

$$: (\sqrt{a^2} - \sqrt{(2+b)^2})\sqrt{ab} \quad a = -\frac{1}{2}, b = -8.$$

75.

$$a \quad \sqrt{1350a}$$

76.

$$) x^2 - 2, \bar{3} = 1, \bar{6}, \quad) 0, \bar{6}x^2 = 1,5, \\ \bar{a} \quad a$$

77.

$$) 16x^2 + 17 = 18, \quad) 16\sqrt{x^2} + 17 = 18, \quad) 3\sqrt{8} + x\sqrt{50} = 98.$$

78.

$$) (1-a)^2 = 4, \quad) 1+(2a)^2 = 5,$$

) $\frac{(a-2)^2}{2} = 2,$) $\frac{(2a)^2-1}{5} = 3.$

2?

79. :

) $(2+a)^2 = 9,$) $\sqrt{2x+1} = 5,$) $\sqrt{(x+2)^2} = 1.$

80.

) $5x^2 + 1,1 = 1,55,$) $3x^2 + 2,2 = 2,32,$
) $x\sqrt{5} - 3 = 7,$) $x\sqrt{3} - 1 = 5.$

81. :

) $2\sqrt{3x} - \sqrt{8} = 4\sqrt{2},$
) $2\sqrt{3x} - \sqrt{8} = 4\sqrt{2}.$

82. :

) $\sqrt{3x+1} = 3\sqrt{2},$) $\sqrt{2x+1} = 2\sqrt{3},$
) $(3x-1)^2 - 11 = 14,$) $(2x+3)^2 - 21 = 60.$

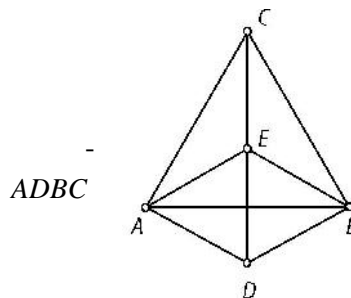
83. :

) $\sqrt{(2x-3)^2} = 1,$
) $\sqrt{(3x-2)^2} = 2.$

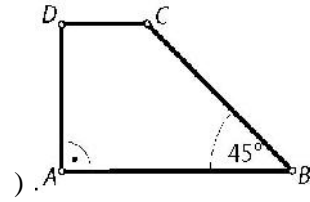
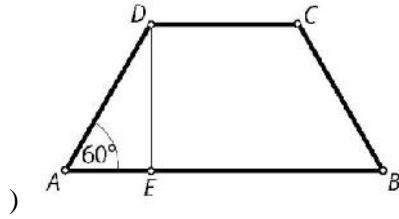
84. 140%

?

85. AB
 ABC ()
 $ADBE$ 60° .
 $AB = 4\sqrt{3}.$



86.



87.

$$\sqrt{2n+1} = \sqrt{(n+1)^2 - n^2}$$

$$A(\sqrt{19}), B(-\sqrt{19}), C(5 - \sqrt{17}), D(-3 + \sqrt{17}).$$

88.

25 cm ,
7 cm .

89.

26 cm ,
24 cm .

90.

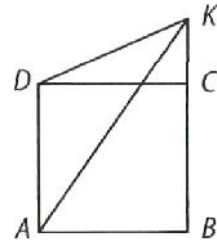
r $k(O, r)$
 $AB = 4\sqrt{3} \text{ cm}$ $\angle AOB = 120^\circ$

91.

10 cm , 6 cm .

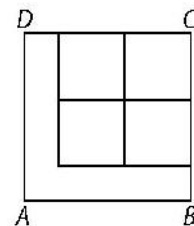
92.

6 cm . K BC $ABCD$
 $AK = 10 \text{ cm}$ (\quad).
 AKD .



93.

125 cm² .
L (\quad) .



L .

94. ABC $\angle ACB = 90^\circ$, $\angle BAC = 22^\circ 30'$. -
-

$2\sqrt{5} \text{ cm} .$

95. $ABCD$ $BC = 4 \text{ cm}$

) $AB = 7 \text{ cm}$,

) $AB = 9 \text{ cm}$.

AB

S .

ABS .

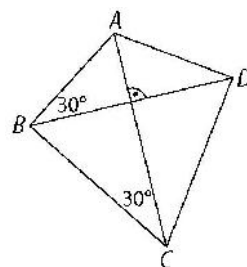
96. :

) 12 cm ,

) 4 cm .

97. $2\sqrt{5}$.

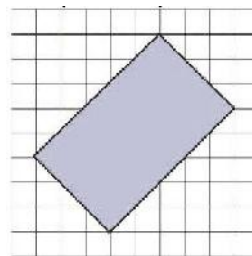
98. ABD, BCD
 $ABCD$
 $AB = AD = 16 \text{ cm}$ $BC = BD$.



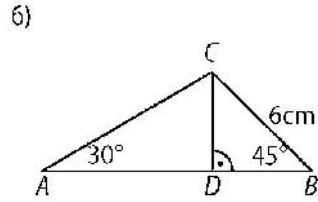
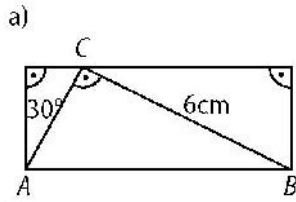
99. 26 mm 20 mm .

?

100. 120 cm^2 .

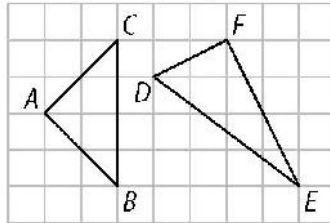


101. ABC



102.

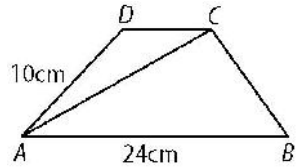
$ABC \cong DEF$. -



103.

$ABCD$.
 ABC

ACD ,



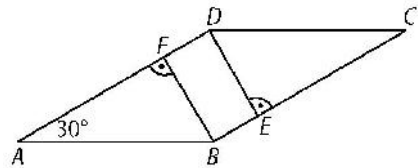
$ABCD$.

104.

$B \cong D$ -
 $ABCD$ -
 $BF \cong DE$ -
 () . -

$BEDF$ $AB = 12 \text{ cm}$

$AD = 8\sqrt{3} \text{ cm}$.



105.

E, F, G, H AB, BC, CD, DA

$ABCD$

$AE = 2EB, BF = 2FC, CG = 2GD, DH = 2HA$.

$I \cong J$

$HE \cong FG$.

$HIFJ$

25 cm^2 , -

$ABCD$.

4.

4.1.

106. :

) $3x^2 - 2 = 5^2$,) $\frac{5}{7}x^2 - \frac{2}{5} = 1$.

107. :

) $\sqrt{(2a-b)^2}$ $a = -2,5$ $b = -\frac{3}{4}$,

) $5 \cdot \sqrt{1 - \frac{16}{25}} - 5\sqrt{9} + \sqrt{\frac{16}{25}}$.

108. : $\sqrt{2}(\sqrt{8} + \sqrt{32}) - (2\sqrt{3})^2$.

109. :

) $2x^2 - 2 = 4^2$,) $\frac{5}{7}x^2 + \frac{3}{5} = 2$.

110. :

) $\sqrt{(a+2b)^2}$ $a = -2,8$ $b = -\frac{3}{4}$,

) $2\sqrt{1 + \frac{9}{16}} - \sqrt{\frac{9}{16}} - 2\sqrt{4}$.

111. : $\sqrt{3}(\sqrt{27} + \sqrt{75}) - (2\sqrt{6})^2$.

112. :

) $(-3)^2 + 2\sqrt{9} - (5\sqrt{4})^2$,) $\sqrt{1,44} + 4 \cdot \sqrt{\frac{36}{25}}$,) $\sqrt{13^2 - 25}$.

113.

x $3 < \sqrt{x} \leq 4$.

114. $\sqrt{2} + x = \sqrt{8}$.

115. :
) $2 \cdot (2\sqrt{9})^2 - (-6)^2 + 3\sqrt{36}$,) $3 \cdot \sqrt{\frac{9}{4}} + \sqrt{2,25}$,) $\sqrt{10^2 - 2^2} \cdot 9$.

116. x $4 \leq \sqrt{x} < 7$.

117. $\sqrt{3} + x = \sqrt{12}$.

118. : $-4 \cdot (-\frac{1}{4})^2 + \frac{3}{2^2} - 1$.

119. : $-6 : \sqrt{1,44} - \sqrt{9} + \sqrt{4}$.

120. : $2x^2 = 0,02$.

121. :
) $\sqrt{8}$ $\sqrt{38}$,) $-2\sqrt{3}$ $\sqrt{3}$.

122. : $\frac{1}{5} : ((-0,1)^2 - \frac{1}{10}) + 1$.

123. : $-10 \cdot \sqrt{(-\frac{1}{5})^2} - \sqrt{0,64} + \sqrt{0,36}$.

124. : $36 = 0,09x^2$.

125. :
) $\sqrt{5}$ $\sqrt{33}$,) $-3\sqrt{2}$ $\sqrt{15}$.

126.

:

a	-2	0,2	-1,2	$\frac{3}{2}$
a^2				

127.

$$A = 5 \cdot \sqrt{0,04}, \quad B = -2^2 : \sqrt{\frac{9}{(-2)^2}}, \quad C = 0,5^2 \cdot \sqrt{5^2}$$

128.

$$\sqrt{72} \qquad \sqrt{2} ?$$

129.

:

a	1,5	-5	0,5	$-\frac{2}{5}$
a^2				

130.

$$A = 5 : \sqrt{0,16}, \quad B = 0,5^2 : \sqrt{6^2}, \quad C = 9 \cdot \sqrt{\frac{(-4)^2}{9}}$$

131.

$$\sqrt{243} \qquad \sqrt{3} ?$$

132.

$$: (-0,5)^2 + \frac{3}{2^2} .$$

133.

$$: -\frac{1}{2} : \sqrt{\frac{1}{4}} - \sqrt{0,01} .$$

134.

$$: \quad 2,5 - 2x^2 = 0,5 .$$

135. $x^2 - 2(xy + 2)$ $x = 2\sqrt{2}$
 $y = -\sqrt{2}.$

136. $: (-\frac{1}{5})^2 - 0,5^2.$

137. $: -10 \cdot (\sqrt{0,64} - \sqrt{\frac{4}{25}}).$

138. $: 0,3 = x^2 : 8 + 0,2.$

139. $(y^2 - 1) \cdot 4xy + 2$ $x = 2\sqrt{2}$
 $y = -\sqrt{2}.$

4.2.

140. 32 cm $12 \text{ cm}.$

141. $3\sqrt{3} \text{ cm}.$

142. $16 \text{ cm}.$ 20 cm

143. 36 cm $10 \text{ cm}.$

144.

$$6\sqrt{3} \text{ cm} .$$

145.

$$8 \text{ cm} .$$

$$20 \text{ cm}$$

146.

$$24 \text{ cm} .$$

$$10 \text{ cm}$$

147.

$$b = 4 \text{ cm}$$

$$c = 10 \text{ cm} .$$

$$a = 16 \text{ cm} ,$$

148.

$$4 \text{ cm} .$$

$ABCD$

$ABCD$.

149.

$$30 \text{ cm} ,$$

$$18 \text{ cm} .$$

150.

$$b = 10 \text{ cm}$$

$$h = 12 \text{ cm} .$$

$$a = 20 \text{ cm} ,$$

151.

$$ABCD \quad 4 \text{ cm} .$$

$ABCD$.

152.

$$a = 16 \text{ cm} .$$

$$d = 25 \text{ cm}$$

153.

$$a = 27 \text{ cm}$$

$$h = 18 \text{ cm} .$$

154.

20 cm 15 cm

13 cm .

155.

10 cm

45°

156.

36 cm .

45 cm

157.

$a = 36\text{ cm}$

$b = 30\text{ cm}$.

158.

20 cm 15 cm

13 cm .

159.

10 cm

30°

160.

$c = 15\text{ cm}$

a
 $b = 9\text{ cm}$.

161.

$b = 10\text{ cm}$,

$h = 8\text{ cm}$.

162.

$a = 9\text{ cm}$.

163.

$b = 14\text{ cm}$

$c = 13\text{ cm}$.

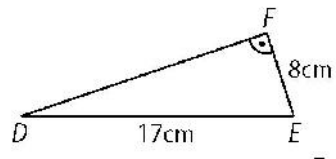
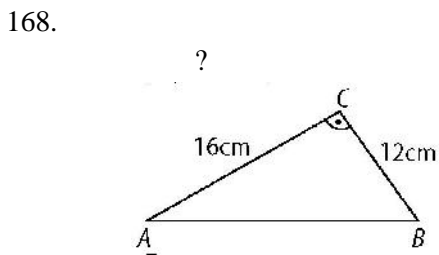
$a = 24\text{ cm}$,

164. $a = 16 \text{ cm}$ $b = 12 \text{ cm}$ c

165. $a = 4 \text{ cm}$ $b = 8 \text{ cm}$.

166. $a = 8 \text{ cm}$.

167. $b = 2 \text{ cm}$ $h = 5 \text{ cm}$ $a = 26 \text{ cm}$,

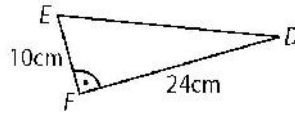
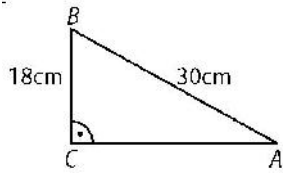


169. $a = 4 \text{ cm}$,

170. 108 cm^2 .
 $a = 4 \text{ cm}$.

171. $b = 18 \text{ cm}$ $c = 10 \text{ cm}$ $a = 24 \text{ cm}$,

172. ?



173.

$$a = 4 \text{ cm},$$

174.

$$60 \text{ cm}^2.$$

$$h = 5 \text{ cm}.$$

175.

$$a = 60 \text{ cm},$$

$$b = 30 \text{ cm}$$

$$h = 10 \text{ cm}.$$

5.

176. :

$$) \sqrt{5 - 2 \cdot 0,5},$$

$$) \sqrt{(3 \cdot 4^2 + 1) \cdot 5^2},$$

$$) \sqrt{2,25 \cdot 4}.$$

177. :

$$) \sqrt{x^2 + 7} = 4,$$

$$) x^2 \sqrt{6} = \sqrt{216}.$$

178.

$$3\sqrt{7}.$$

179.

$$10\sqrt{2} \text{ cm},$$

$$45^\circ$$

$$3\sqrt{2} \text{ cm}.$$

180. -
 $6\text{ cm} \quad 8\text{ cm} .$

181. :
) $\sqrt{5 \cdot 0,4 + 7}$,) $\sqrt{(4 \cdot 3^2 - 11) \cdot 7^2}$,) $\sqrt{0,04 \cdot 25}$.

182. :
) $\sqrt{x^2 - 11} = 5$,
) $x^2 \sqrt{17} = \sqrt{153}$.

183.
 $2\sqrt{11}$.

184.
 $10\sqrt{2}\text{ cm}$, 45° , $3\sqrt{2}\text{ cm}$.

185.
 5 cm 13 cm .

186. :
 $\sqrt{5^2 - 4^2} - \sqrt{(5-4)^2} + 5\sqrt{(-4)^2}$.

187. :
 $9x^2 - 12 = 13$.

188. -
 $ABCD$ $AB = 12\text{ cm} \quad BC = 5\text{ cm}$.
 B AC .

189.
 $3 + \sqrt{2}$.

190.

$$2\sqrt{3} \text{ cm}.$$

191.

$$:$$

$$\sqrt{(13-5)^2} - \sqrt{13^2 - 5^2} + 13\sqrt{(-5)^2}.$$

192.

$$25x^2 + 1 = 50.$$

193.

$$ABCD \quad AB = 12 \text{ cm} \quad BC = 5 \text{ cm} \quad -$$

$$B \quad AC.$$

194.

$$5 - \sqrt{3}.$$

195.

$$6\sqrt{3} \text{ cm}.$$

196. $x = -2 \quad y = -3$

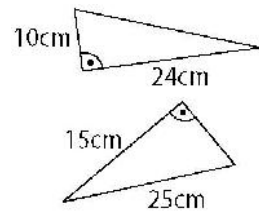
$$1 - \frac{1}{x} \cdot (2 + 2x)^2.$$

197.

$$:$$

$$\left(2\sqrt{\frac{1}{4}}\right)^2 \cdot (-1 + \sqrt{(-0,4)^2}).$$

198.

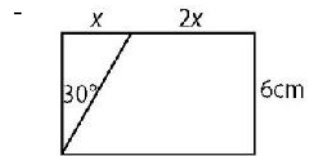


199.

$$16 \text{ cm}.$$

$$120 \text{ cm}^2, \quad -$$

200.



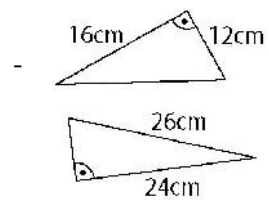
201. $x = -3$ $y = -2$

$2(1 - 3y) + (\frac{x}{3})^2$.

202. :

$(2\sqrt{(-\frac{1}{2})^2} + 2) : (3\sqrt{2})^2$.

203.



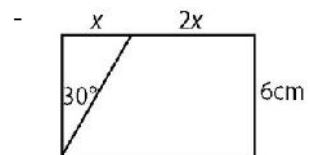
204.

60 cm

30 cm.

205.

?



206. $x = -2$ $y = 3$

$A = x^2 - 2$, $B = (x - 2y)^2$, $C = B - A^2$

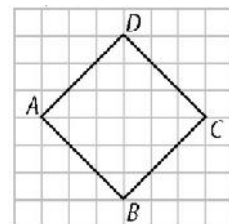
207. :

$\sqrt{\frac{1}{9}(-3 + \sqrt{(-0,9)^2})}$.

208.

ABCD

2 cm.



209. $P = 240 \text{ cm}^2$

$d_1 = 30 \text{ cm},$

210. $r = 30^\circ$

$b = 12 \text{ cm}.$

211. $x = -2 \quad y = 3$

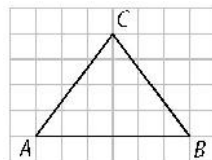
$A = (x - 2)^2, B = 2x - y^2, C = A - B^2$

212. $: 4 \cdot \sqrt{\left(-\frac{1}{4}\right)^2} - \sqrt{0,16}.$

213.

ABC

$2 \text{ cm}.$



214. $P = 480 \text{ cm}^2$

$d_1 = 20 \text{ cm},$

215. $r = 30^\circ$

$h = 4 \text{ cm}.$

216. $A : B$

$A = \left(\left(\frac{3}{5}\right)^2 - \frac{3}{5^2}\right) \cdot (-5)^2 \quad B = -2^2 + 5 \cdot 0,2^2.$

217. $:$

$\left(\sqrt{\frac{2}{3}}\right)^2 \sqrt{(-0,9)^2} - \sqrt{0,2^2} : \sqrt{0,04}.$

218. $d = 13\sqrt{2} \text{ cm}$

$a = 15 \text{ cm} \quad b = 20 \text{ cm} .$

.

219. 45° $4 \text{ cm} .$

220. $P = 250 \text{ cm}^2$

$a = 30 \text{ cm} \quad b = 20 \text{ cm} .$

.

221. AB

$A = \frac{3^2}{4} + (\frac{1}{4})^2 \cdot (-2)^2 \quad B = ((-2)^2 - 2) : (-0, 2)^2 .$

222. $:$

$5((\sqrt{-\frac{1}{5}})^2 - \sqrt{0,16}) : \frac{\sqrt{0,5^2}}{3} .$

223. $d = 10 \text{ cm}$

$a = 8\sqrt{2} \text{ cm} \quad c = 10\sqrt{2} \text{ cm} .$

-

.

224. 120° $24 \text{ cm} .$

.

225. $L = 40 \text{ cm} , \quad c = 12 \text{ cm}$

$a = 12 \text{ cm} .$

.

II , ,

1.

1. :
-) $3 \cdot 3^3 = 9^3$,) $3^3 : 3 = 9$,) $(3^3)^3 = 3^6$,
) $3^3 \cdot 3^3 = 3^6$,) $3^3 : 3^3 = 3$,) $(\frac{3^3}{3})^3 = 3^6$.

2. :
-) -2^7 $0,7^2$,) $0,1^4$ $(-0,5)^2$,
) $\frac{3^3}{5}$ $\frac{3}{5^3}$,) $(-1)^5$ $(-1)^{2023}$.

3. :
-) -5^4 -3^4 ,) $(-5)^4$ $-(-8)^7$,
) $-(-11)^{11}$ 4^{44} ,) $(-0,7)^{10}$ $0,3^{10}$,

4. : 2^3 $(-2)^3$?

5. $(x \cdot x^2 \cdot x^3 \cdot x^4 \cdot x^5) : (x^5 \cdot x^4 \cdot x^3 \cdot x^2 \cdot x)$,
 $x = -2023$.

6. $x = \sqrt{2 - \frac{1}{25}}$ $(\frac{x^4 \cdot x^9}{(x^3)^4})^2$.

7. $x = \sqrt{2 + \frac{1}{4}}$ $(\frac{x^{17} \cdot x^{10}}{(x^2)^3})^2$.

8. 1 -1
 . ?

9. -2 3
 . ?

10. :

) $7^5 = 7 \cdot 5$,) $7^5 = 7 + 7 + 7 + 7 + 7$,

) $7^5 = 7 \cdot 7 \cdot 7 \cdot 7 \cdot 7$,) $7^5 = 5 \cdot 5 \cdot 5 \cdot 5 \cdot 5$.

11. :

) $10^2 \cdot 10^4$,) $(10^3)^3 \cdot 10^3$.

12.) $2^3 + 3^2 - 5$.

) $5^2 \cdot 5^3$.

13. „ “,

„ “.

$10^2 10^5 = 10^7$	$10^8 : 10^2 = 10^6$	$(10^5)^4 = 10^9$	$10^8 10 = 100^8$	$10^8 : 10 = 1$

14. $-4a^2 + 3a - 5$ $-2a^3 + a^2 - 3a - 1$.

15. „ “,

„ “.

$2^5 2^5 = 4^7$	$2^5 2^2 = 4^6$	$(2^7)^2 = 2^{14}$	$2^5 : 2 = 2^4$	$4^8 : 4^4 = 4^4$

16. :

) $2a + 5a - a$,) $5a^2 + a^2 - (2a^3 - 2)$,) $(5 - 3a)(4 + a)$.

17. :

) $2a + 5 + 4a - 2$,) $(x - 3) - (2x + 4)$,

) $2 \cdot 3a + 3(2a - 1)$,) $(5x - 3)(2x + 1)$.

18. :

$5(x - 2) + 3(1 - x) = 2023$.

19. $p(x)$

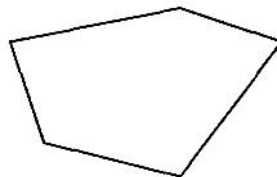
$5x^2 + 4 - 6x + p(x) - 5 = x^2 + x - 1$.

20.) $P = -a^2 + 4a$ $Q = 2a^2 - 4a - 2$.

) $Q = 2a^2 - 4a - 2$ $P = -a^2 + 4a$.

21.

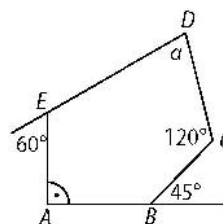
.
:
)
)
)



22.

r

ABCDE



23.

60°

24.

45°

25.

r.

r.

26.

12

?

27.

1800°

:

)

,

28. 144 cm^2 .

2.

29. $x = -2$,
 $\left(\frac{x \cdot x^2 \cdot x^3}{(x^2)^2}\right)$, $\left(\frac{(x^5 \cdot x^3)^4 (x^7)^2}{(x^6)^4 (x^4)^5}\right)$, $\left(\frac{x^{11}}{x^9}\right)^9 : \left(\frac{x^{22} \cdot x^{23}}{(x^4)^{10}}\right)$.

30.
 $\left(\frac{7^7 \cdot 7^8 \cdot 7^9}{7^{10} \cdot (7^2)^2}\right)$, $\left(\frac{6^{16} \cdot (6^3)^3}{6^6 \cdot 6^7 \cdot 6^8}\right)$, $\left(\frac{(\sqrt{3})^4 \cdot (\sqrt{2})^3}{\sqrt{8}}\right)$, $\left(\frac{(\sqrt{2})^4 \cdot (\sqrt{3})^3}{\sqrt{12}}\right)$.

31.
 $6 \cdot (-1)^6 - 5 \cdot 1^5 + 4 \cdot (-2)^4 - 3 \cdot 2^3$,
 $6 \cdot 1^6 - 5 \cdot (-1)^5 + 4 \cdot 2^4 - 3 \cdot (-2)^3$.

32.
 $\frac{3}{4} \cdot \left(-\frac{2}{3}\right)^2 - 0,2^3 - (-2)^3$.

33.
 $((-2^2)^2)^2$, $(-2^2)^4 \cdot 2^5 : (-2)^4$

34.
 $1,06 \cdot 10^6 + 12,4 \cdot 10^5$.

35.
 $2^8 \cdot (0,5)^4 \quad (-0,2)^8 \cdot \left(\frac{1}{2}\right)^3 \cdot (-5)^8$.

36.
 $((-2)^8 \cdot 2^{12} : (-2)^{15}) \cdot (2^5)^2 : 4^5$.

37. :

) $(-6)^{10} > 4^{10}$,) $1,1^3 < 1,1^5$,) $0,3^3 < 0,3^4$,
) $(\frac{1}{3})^3 > (\frac{1}{5})^2$,) $25^5 > 5^9$.

38. < >

:

) $50^5 _ 25^6$,) $10^8 _ 120^4$.

39. :

) $(3^5 \cdot 81)^3$ $(27 \cdot 3^7)^2$,
) $(2^3 \cdot 16)^5$ $(32 \cdot 2^6)^3$.

40. n

$3^2 < 2^n < 3^5$.

41. :

) $5 \cdot 5^2 \cdot 5^3 \cdot 5^4 \cdot 5^5 = 5^x$,) $5 \cdot 5^2 \cdot 5^3 \cdot 5^4 \cdot 5^5 = 125^y$.

42. $\frac{5a-b}{a+3b}$ a

b .

43. :

) $4x^3 - x^2 - 5x + 1 - (5x^3 - 5x + 2) + 2x^2$,
) $-3x^3 + 2x^2 - x - 4 - (3x^2 - 2x - 5) + 3x^3$.

44. $A = 4xy^2$ $B = 5x^2y$:

$2AB, A^2B, A + 4B, A - (4 - B), (A - 1)(B + 1)$.

45. $A = 3x^2 - x - 2$, $B = -2x^2 + x + 5$, $C = 3x - 2$

$D = 3x + 2$. $A + B, C - B, C \cdot D, C^2$.

46.

$$A = 5x^2 - (3 - 3x) - (4x^3 - x^2 + x - 1)$$

$$B = 1 - (x^3 - 2x^2 - 3x - 6) - (5x - 2).$$

47. :

$$) A = -2x^2 - 3x + 5 \quad B = 2x^2 - 7x + 12,$$

$$) A = -4x^2 - 5x + 1 \quad B = 4x^2 - x - 3.$$

48. :

$$) 12x^2y^3z : (3xy^2), \quad x = -1, y = -3, z = -2012,$$

$$) (3x^2y^3z) \cdot (-6x^2z) : (9x^3y^2) \quad x = -2, y = -2012, z = -1.$$

49. $P = 4m^2 - mn + 3n^2 \quad Q = -5m^2 + mn - 3n^2$ -
 $P - Q, P + Q \quad PQ.$

50. :

$$) x + 2, \quad) 3x - 5, \quad) \frac{1}{2}x + 6,$$

$$) 3 - x, \quad) 5x + 2, \quad) \frac{1}{3}x + 2.$$

51. $-4a^2 + 3a - 1$
 $8 - 7a - 6a^2?$

52. :

$$) 2x^2 - 3x + 8 = 2x^2 - x + 6,$$

$$) 2x(x - 3) = 2(x^2 - x + 6).$$

53.) x
 $-x^2 + 6x - 6 \quad -x^2 - 8x + 2 \quad 2?$
) x
 $-2x^2 + 6x - 6, -x^2 - 12x + 2 \quad 3x^2 - x + 5 \quad -6?$

54. $(5x - 3)(25x^2 + 15x + 9).$

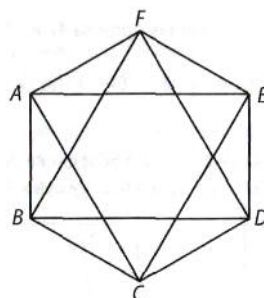
64. $\frac{3}{5}$,
 12 cm .

65. 2 cm
 8 cm .

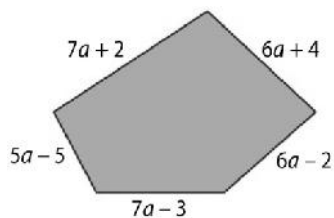
66. $12\sqrt{3}$ cm .

67. $ABCDE$ $MOCB$ M O AB .

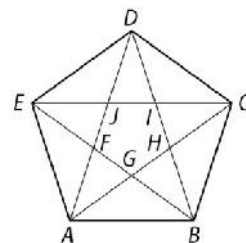
68. $a = 8$ cm
 ($ABCDEF$) .



69. 120 cm .
 a .



70. $ABCDE$.
 ABG , BCH , CDI , DEJ EAF



3.

71. $\frac{16^{n+1} \cdot 2^{5n+3}}{8^{4n}} : 4^{2-n}$ 2.

72.

) $a^2b^2 - b^3a$ $a = -4$ $b = 0,2$,

) $(a^3 - b^3) : (a - b)^3$ $a = 0,5$ $b = \frac{1}{5}$.

73.

) $4 \cdot 3^7 + 5 \cdot 3^7$,) $25 \cdot 2^8 - 9 \cdot 2^8$,) $\frac{48 \cdot 4^{10}}{3 \cdot 4^{10}}$.

74.

: $\frac{3,2^2 + 2 \cdot 3,2 \cdot 0,8 + 0,8^2}{4(3,2 - 5,2)}$.

75.

: $\frac{((-5)^3 \cdot 25^2)^2}{5^8} : (\frac{1}{5})^4$.

76.

) $2^{13} + 2 \cdot 2^{11}$ 2^{15} ?

77.

$(5\sqrt{2})^n < (2\sqrt{5})^4$. n

78.

$6 \cdot 3^9 + 7 \cdot 3^{10} = 3^x$.

79.

x y , $x < 1000$
 $2 \cdot 2^2 \cdot 2^3 \cdot 2^4 \cdot 2^5 \cdot 2^6 \cdot 2^7 \cdot 2^8 = x^y$.

80.

$P = a - 3$, $Q = 3a^2 + a$ $R = 4a^2 - 7$:
) $P - Q + R$,) $P + Q - R$,) $-P + Q + R$,) $P + Q + R$.

81.

:

) $5x^2 - (x-2)(5x+2) + 4x^2 - (2x-1)(2x+3)$.

) $3x(1-2x) - x(3x+2) - x(3-4x) + 3x(x-1)$.

82. $P(x) = 2012$,

$$P(x) = 8x^3 - (2x)^2 - x - 1 - (2x)^3 + 4x^2 + 2x + 13.$$

83.

) $10x + 12 - 8x + 8 = -16$,

) $9x - 13 - 6x - 6 = -25$.

84.

3,

4.

85.

$$2(x-3)(x+1) = 2(x^2 + 2x - 1).$$

86.) $1 - P = 3x \quad Q - 2 = 5x, \quad P - Q = 5.$

) $-4x + P = -1 \quad 3x - Q = 2, \quad Q - P = 5.$

87.

$a \quad 6$

?

88.

$3x - 5$

$2x + 1$

89.

?

?

90.

D_n

n

$D_{2n} : D_n = 5,$

$D_{3n} : D_n.$

91.

$4x + 3,$

$5x + 2.$

$3x - 1$

92.

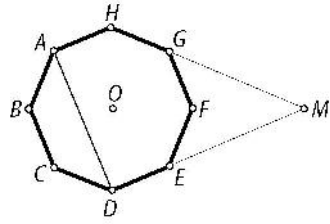
$ABCDEFGH$

HG

M

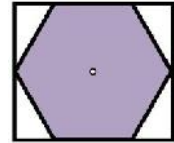
$\angle BAD, \angle ADE, \angle EMG$

DE



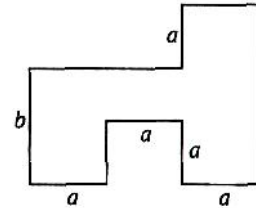
93.

$32\sqrt{3} \text{ cm}^2$



94.

a, b



95.

cm

$12\sqrt{3}$

96.

6 cm

97.

) :

)

98.

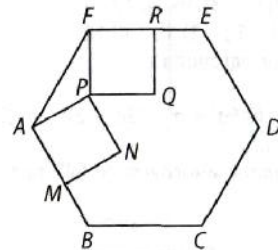
8 cm

99.

$AMNP$ $FPQR$

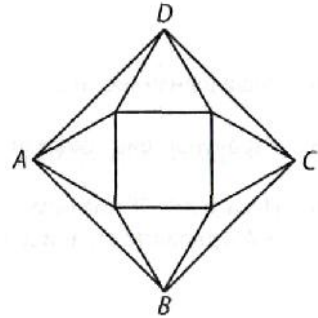
$ABCDEF$

$\sqrt{3} \text{ cm}$



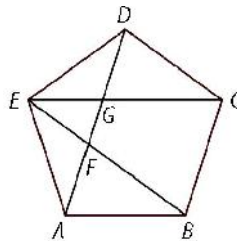
().
) APF ,) PNQ .

100. $ABCD$ $a = 10 \text{ cm}$



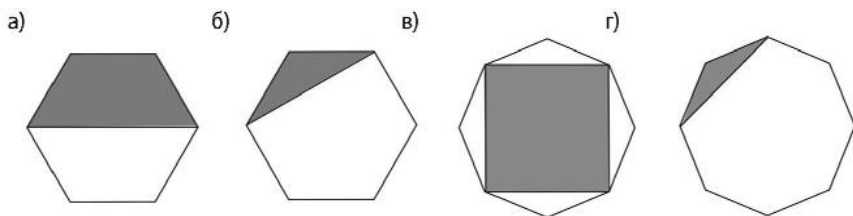
101.

102. $ABCDE$ ().
 : $\angle AEB, \angle EFB, \angle AGC$.



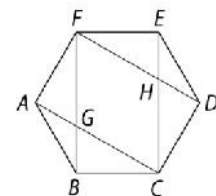
103.

().



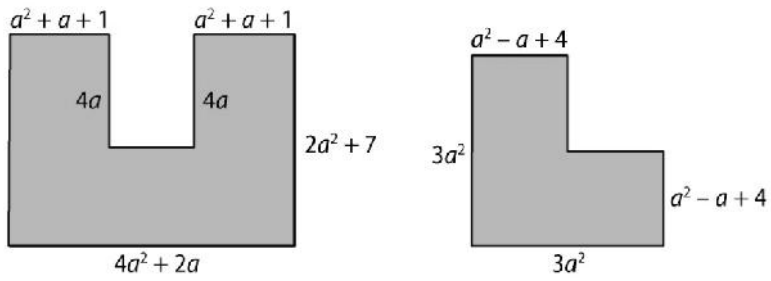
104.

$ABCDEF$. $AB = 6 \text{ cm}$
 $GCHF$.



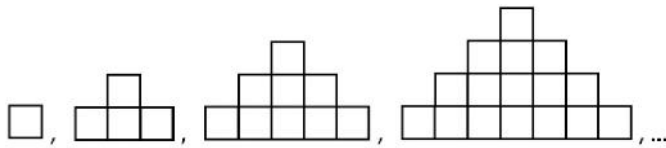
105.

38 cm .



106.

8 cm² .



107.

a, d_1, d_2, d_3

$d_1 < d_2 < d_3$.

) $d_3 = d_1\sqrt{2}$,

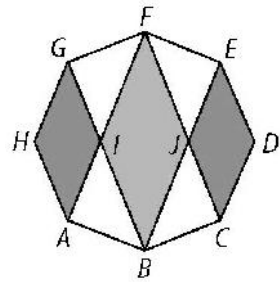
) $d_3^2 = a^2 + d_2^2$.

108.

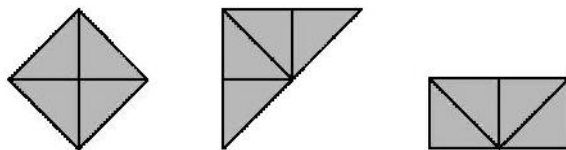
$ABCDEFGH$.

$AIGH$ $CDEJ$

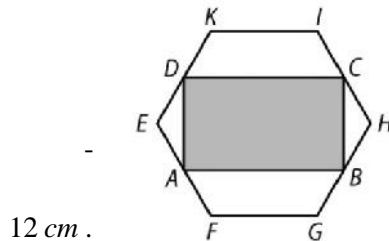
$BJFI$.



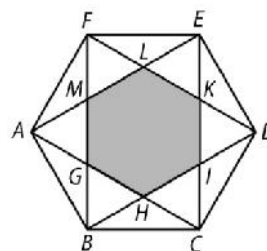
109.



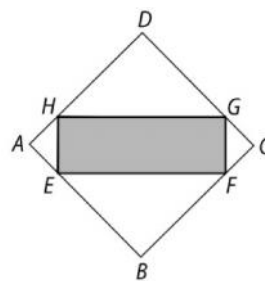
110. 0 A, B, C, D
 EF, GH, HI, KE
 $EFGHIK$.
 $ABCD$



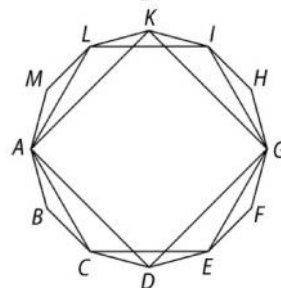
111. $ABCDEF$ -
 $GHIKLM$ (). -
 $ABCDEF$ $GHIKLM$. -



112. E, F, G, H -
 $ABCD$ $1:3$ ($AH : HD = 1:3$),
 $EFGH$.



113. $ABCDEFGHIKLM$ -
 ($ACGIL$) . -
 $ADGK$. -
 6 cm , -



4.

4.1.

114. :
 $) 2 \cdot (3^2)^2 - 3 \cdot 3^3$, $) 2^{10} : (16 \cdot 8)$.

115. $: 7^{15} \cdot 7^3 : 7^8 = 7^x .$

116. $\frac{2a^3 - 3b^2}{5ab^2} \quad a = 1, b = -2 .$

117. $: \quad) 5 - (-5)^2 - 5^3, \quad) 7^4 \cdot (-7)^6 : 7^8 .$

118. $\frac{3a^2b^3}{5a^2-b} \quad a = -1, b = 2 .$

119. $: \quad 11^{10} \cdot 11^x = 11^{30} : (11^3)^6 .$

120. $: \quad) ((-\frac{1}{2})^2 + \frac{1}{2}) \cdot 2^3, \quad) (-2^2)^3 - (4^2)^2 .$

121. $\frac{4a^2b^3}{5a^2+b} \quad a = -2, b = 4 .$

122. $: \quad (\frac{1}{121})^{10} \cdot 11^x = 11^{22} : ((-\frac{1}{11})^2)^3 .$

123. $: \quad) ((-3)^3 + 3^2) \cdot (\frac{1}{2})^2, \quad) (-\frac{4}{5})^2 - (\frac{2}{5})^3 \cdot 5^2 .$

124. $(4\sqrt{3})^n < (3\sqrt{2})^4 . \quad n$

125.

:

$$\frac{(5^3)^6}{5^8 \cdot 5 \cdot 5^5} + \frac{7^4 \cdot 7 \cdot (7^2)^3}{7^8}.$$

126.

$$\left(-\frac{1}{5}\right)^2 + \frac{1}{5} \cdot (-2)^3, \quad \frac{1}{3} \cdot (-4)^2 : \left(-\frac{2}{3}\right)^3.$$

127.

n

$$4^2 < 3^n < 4^5.$$

128.

:

$$\frac{(6^2)^7}{6^5 \cdot 6 \cdot 6^6} + \frac{8^5 \cdot 8 \cdot (8^3)^3}{8^{11}}.$$

4.2.

129.

$$2a^3 + (3a - 2) - (4 + a^2 - 3)$$

130.

$$p(n) = (n^3 - 3)(2n^3 + 4)$$

131.

$$(x - 1)(x + 2) - x(x + 4) = -10.$$

132.

$$4a^3 + 4(3a^2 - 1) - (4 + a^2)(a - 3).$$

133.

$$2(n^2 - 3) - 3(2n^3 + 4) \quad 3(5 + n^2) + 2(2n^3 - 4).$$

134.)

.

135.

$$) (2a)^2 \cdot (a^3)^3, \quad) 4a^{10} : (a^3)^3.$$

136.

$$) \frac{1}{2}x + x = \frac{1}{2}x - 2, \quad) -x - \frac{3}{4} = \frac{1}{2} - 2x.$$

137.

$$2x^3 - 4x^2 + 6x - 12$$
$$2 + 3x - x^2 + 4x^3.$$

138.

$$P(x) = 2x^3 + 3x^3 + 4x + 5 \quad Q(x) = x^3 - 4x^2 - 5x + 1.$$

139.

$$) -2x - 9 - (3 - 4x + 5x) = 2, \quad) -(5x - 4) + 8 + 3x - 6 - 2x = 2.$$

140.

$$A = -3a^3 - 4a^2 - 12, \quad B = 5a^2 - 2a + 2, \quad C = -5a^3 - 6a$$

A B

C.

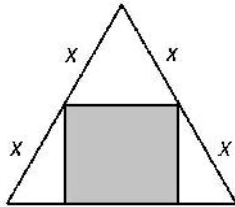
141.

:

151.

152.)

)

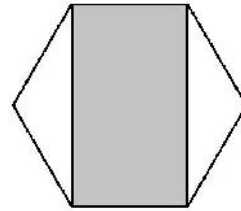


?

?

().

().



153.

22°

154.

9°

?

?

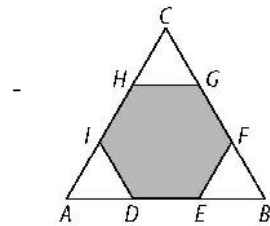
155.

D, E, F, G, H, I

().

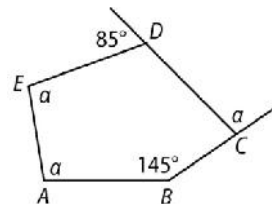
$DEFGHI$

$AB = 18 \text{ cm}$.



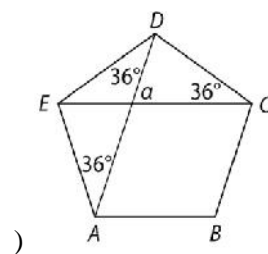
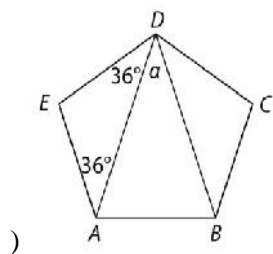
156.

r .



157.

158.



5.

159.
$$: \frac{5^4 \cdot (-5)^7 \cdot (5^3)^3}{(-4)^2 \cdot 2^3} .$$

160.
$$: \frac{(a^9)^{5n+1}}{(a^n)^{45} a^8} .$$

161.
$$P : 2x(x^2 - 3x + 4) - P = x^3 + 2x^2 - 3x + 4 .$$

162.
$$216^\circ .$$

163.
$$ABCDEF : ABDE . \quad 8 \text{ cm} .$$

164.
$$: \frac{7^4 \cdot (-7)^6 \cdot 7^8}{(4^3)^2 \cdot (-2)^9} .$$

165.
$$: \frac{(b^8)^{4n+3}}{(b^{32})^n b^{20}} .$$

166.

P

$$P + 3y(2y^2 + y - 5) = y^3 - 2y^2 + 3y - 5.$$

167.

336° .

168.

ABCDEF

8 cm .

CDF .

169.

$$: (2^2)^2 + \frac{(-4)^3}{2^4} - \frac{8^2 \cdot 2^3}{4^2}.$$

170.

$$(a^9)^{5n+1} \quad (a^n)^{45} a^8 \quad a > 1 \quad .$$

171.

:

$$(2x - 1)(x + 2) - 2x(x + 4) = -12 .$$

172.

173.

ABCDEF

10 cm .

ABC .

174.

$$: (-2^3)^2 + \frac{2^5}{4^2} - \frac{8^2 \cdot (-2)^3}{2^4}.$$

175.

$$(a^8)^{4n+2} \quad (a^{32})^n a^{20} \quad a > 1 \quad .$$

176.

$$(3x + 3)(x - 3) - 4x(x + 4) = 16.$$

177.

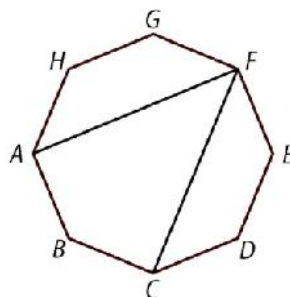
178. $ABCD$ 10 cm M
 AB CDM .

179. $a^4 - 4a^3 + 5$ $a = -2$.

180. $:\frac{x^{20} \cdot (x^4)^2}{(x^2)^5}$.

181. $:-2x^2 + 5x = 7 - (6 - 5x) + (2 - 7x^2)$.

182. $ABCF$ $ABCDEFGH$.



183. 4 cm .

184. $6 - 2a^3 - a^4$ $a = -3$.

185. $:\frac{x^6 \cdot x^{10} \cdot x^2}{(x^7)^2}$.

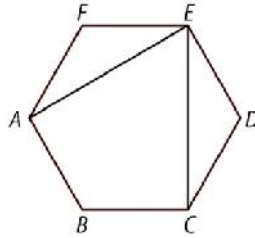
186.

$$8a + (-4a^2 + a - 1) - (-a^3 + a) + 6a^2 - 6.$$

187.

$ABCDEF$. -

$ABCE$.



188.

4 cm .

189. $a = -3$

$$A = 2a^3 - 2a^2, B = -3a^3 + a + 5, C = a^2 - 4a + 10$$

190.

$$: \frac{2^8 \cdot (-2)^7 \cdot (2^2)^4}{2^5 \cdot (-2)^8}.$$

191.

$$A = -2x^3 + 5x - 7, B = 2x^3 - x^2 + 7, C = x^2 - 5x + 7, D = 5x - 7.$$

$$) A - B + C, \quad) A + B - (C - D).$$

192.

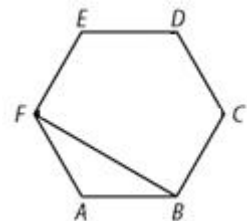
162° .

?

193.

$ABCDEF$ $a = 6\text{ cm}$.

FAB .



194. $a = 2$

$$A = a^3 - 2a^2, B = -2a^3 + a + 5, C = 2a^2 - 4a + 10$$

195.
$$: \frac{3^7 \cdot (3^3)^6}{3^{10} \cdot (-3)^2 \cdot 3^5} .$$

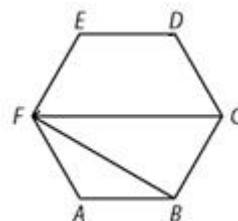
196.
$$A = -2x^3 + x - 7, B = 2x^3 - 2x^2 + 7, C = 3x^2 - 5x + 7, D = 6x - 7 .$$

$$) A + B - C , \quad) D - (A + C - B) .$$

197. $156^\circ .$
?

198. $ABCDEF \quad a = 6 \text{ cm} .$

$FAB .$



199.
$$: \frac{10^8 \cdot (-10)^7 \cdot (10^2)^3}{10^8} .$$

200.
$$P = B - (A + C)$$

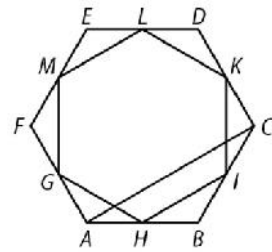
$$A = -3a^3 - a^2 + 2a, B = 2a^2 + 3a - 2, C = 4a^3 + 2a - 6 .$$

201. $20^\circ .$

202. $6 \text{ cm} .$

203. G, H, I, K, L, M
 ().
 $ABCDEF$
 4 cm .

$ABCDEF$ -
 $GHIKLM$ -



204.
$$: \frac{(5^3)^5}{5^{12} \cdot (-5)^2 : 5} \dots$$

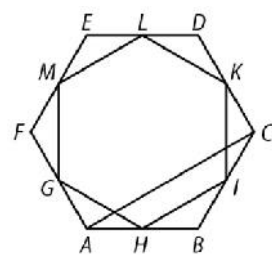
205. $P = A + (B - C)$
 $A = -3a^3 - a^2 + 2a, B = 2a^2 + 3a - 2, C = 4a^3 + 2a - 6.$

206. 15° -
 -
 .

207. 6 cm -
 -

208. G, H, I, K, L, M
 ().
 $ABCDEF$
 $GHIKLM$
 4 cm .

$ABCDEF$ -
 $ABCDEF$ -



III

1.

1. :
-) $3(a^2 - 2a) - a(3a + 2)$,
 -) $(a + 5)(1 - a) + a(a - 5)$,
 -) $5(b - 2b^2) + b(4 + 10b)$,
 -) $5(b - 3)(b + 1) - b(b + 3)$.

2. :
-) $3a + 3b = 6(a + b)$,) $3a + 3b = 3(a + b)$,
 -) $3x^2 + 3 = 3x(x + 1)$,) $3x^2 + 3 = 3(x^2 + 1)$.

3. :
-) $-2x^3y^2 \cdot 3xy^5$,) $4x^2y^4 \cdot 12x^7y^2$.

4. $A = -2a^2$ $B = a - 2$.
 $2A + 3aB$.

5. $5(a - 1) + (a + 2)(a - 3) - 4a(-a)$

6. $18x^4$ $12x^6$.

7. :
-) $3x + 3y$,) $5a - 10b + 15c$.

8. :
- a) $5x + 10y$,) $abc - bca$,
 -) $2x^3 + 4x^2 - 6x$,) $12 - 4x^2$.

9. :
-) $4a + 4b$,) $a^2b + ab^2$,) $3a^2 - 6$,

) $x^2 + 2xy + y^2$,) $a^2 - 169$.

10. $8a^3 - 2a^2$.

11. :

) $(a+3)^2 - a^2 = 6a + 9$,

) $(a-3)^2 - a^2 = 6a - 9$,

) $(a-3)(a+3) - a^2 = 9$.

12. :

) $x^2 + \underline{\hspace{1cm}} + 4 = (x+2)^2$,

) $(a-1)^2 = a^2 - 2a + \underline{\hspace{1cm}}$,

) $a^2 - \underline{\hspace{1cm}} = (a-b)(a+b)$.

13. :

) $x^2 - 2x + 1 = (x - \underline{\hspace{1cm}})^2$,

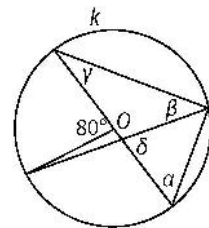
) $(a+5)^2 = a^2 + \underline{\hspace{1cm}}a + \underline{\hspace{1cm}}$,

) $a^2 - 49 = (\underline{\hspace{1cm}} + 7)(a - \underline{\hspace{1cm}})$.

14. $2a + 5$ $3a + 1$.

15. k

O . 40° ?



16. 14 cm .

17. $AB = 10 \text{ cm}$ -

?

18.) $25f \text{ cm}^2$.
) $8f \text{ cm}$.
19.) $100f \text{ cm}^2$.
) $1f \text{ dm}$.
20. $O = 18f \text{ cm}$ $O' = 16f \text{ cm}$.
 ?
21.) $12,56 \text{ cm}^2$.
) 157 cm .
 $f \approx 3,14$.
22. $27f \text{ cm}^2$. -
23. k k' $36:25$.
24. 6 cm .
 72° .
- 2.**
25. :
) $(2a - 3)(2a + 1)$,) $(4a - 3)(4a + 1)$.
26. $x^2(2x - 2)$ $2x(2x^2 - 2x + 1)$.
27. $A = 2a - 3$ $B = 2 - 3a$.
 :
) A B ,

$$) \quad A \quad B.$$

$$28. \quad = \quad \neq$$

:

$$) \quad 6a^5 + 6a^3 + a \quad \underline{\quad} \quad 6a^2(a^3 + a),$$

$$) \quad 4a^2 + 4a + 1 \quad \underline{\quad} \quad 4a(a+1),$$

$$) \quad 8a^2 + 4a^4 - 2a^3 \quad \underline{\quad} \quad 2a^2(2 + 2a^2 - a),$$

$$) \quad 2a^2 - 8 \quad \underline{\quad} \quad 2(a+2)(a-2),$$

$$) \quad a^3 - 6a^2 + 9a \quad \underline{\quad} \quad a(a-3)^2,$$

$$) \quad 9a^2 - 1 \quad \underline{\quad} \quad (9a+1)(9a-1).$$

$$29. \quad \frac{2x-3}{2x+3} \quad x = -0,125.$$

$$30. \quad \frac{(x-4)(x+4) - (x+5)^2}{x} \quad ,$$

$$x = -0,6.$$

$$31. \quad \frac{(x-2)(x+2) - (x-5)^2}{x} \quad ,$$

$$x = -0,8.$$

$$32. \quad A = 3x - 5 \quad B = 2 - 2x. \quad :$$

$$) \quad A^2 - B^2, \quad) \quad (A - B)^2.$$

$$33. \quad :$$

$$) \quad 16x^2 - 8x, \quad) \quad 49x^2 - 16, \quad) \quad x^2 - 8x + 16.$$

$$34. \quad :$$

$$) \quad 9x - 18x^2, \quad) \quad 4 - 25y^2, \quad) \quad x^2 - 10x + 25.$$

$$35. \quad) \quad 3a^8 + 27a^4, \quad) \quad 6y^2 - 24.$$

$$36. \quad :$$

) $7x^4y^3 - 14x^2y^2 - 21x^3y^2$,) $\frac{36}{25}x^2 - 0,81$,) $144x^2 - 24x + 1$

37.

) $4a^2 - 4b^2$,) $a^2b + ab^2 + ab$,) $3a^4 - 3$,
) $x^2 + 2xy + y^2 - 25$,) $a^3 + 9a - 6a^2$.

38.

) $2a^2f + 2af\sqrt{2}$,) $b^2 - \frac{a^2}{4}$,) $(\frac{b}{2})^2 - (\frac{3a}{2})^2$.

39.

$A = 4xy$, $B = -3xy^2$ $C = 12x^3$.
 $P(x, y) = ABC - B^2$.

40.

) $2,8^2 + 4,2^2 + 5,6 \cdot 4,2$,) $4,08^2 - 5,92^2$.

41.

a, b, c :
) $(-2x + 3)2x - 2(3x^2 + ax - 3) = -bx^2 - 4x + c$,
) $(x - 3)^2 - (2x + a)^2 = -3x^2 + bx + 8$.

42.

a b
 :
) $2x^2 - 4x = 2x(x - a)$,
) $x^2 - 0,01 = (x - a)(x + b)$,
) $2x^2 - 8x + 8 = 2(x - a)^2$.

43.

a, b, c :
) $(3x - a)(2x + 1) = bx^2 + cx - 4$,) $(2x - 1)(ax + 5) = 4x^2 + bx - c$.

44.

$8a^2 - _ + _ b^2 = 2(_ + 3_)^2$.

?

45. $a^2 + b^2 = 170$ $ab = 77$, $a + b$ $a - b$.

46. $c = x + 3$. $a = x - 1$,
 $b = 24 \text{ cm}$

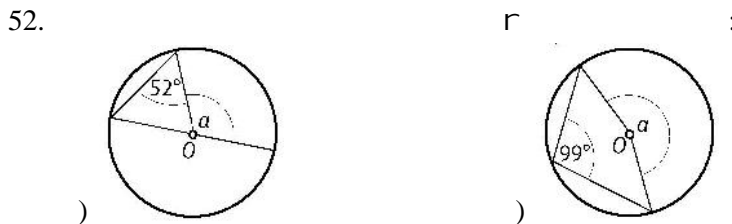
47. $a - 1$. $a + 1$, $a + 4$
 a 2 cm^2 $-$

48. $P(a)$ $:$
) $(4a - 3)P(a) = 8a^2 - 6a$, $(-5a + 3)P(a) = -20a^2 + 12a$.

49. $:$
) $x^2 - (x - 2)^2 = 2$, $(x + 5)^2 + 5 = x^2$.

50. $:$
) $(x - 73)^2 = 0$, $(x - 2)(x - 3) = 0$,
) $x^2 - 25 = 0$, $3x^2 - 6x^3 = 0$.

51. 270° .

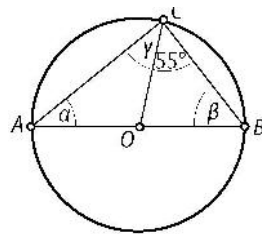
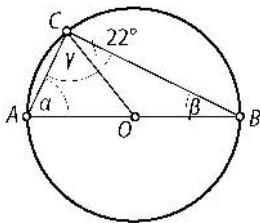


53. A, B, C $4:5:11$.
 ABC .

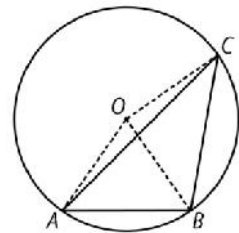
54. A, B, C $5:4:3$.
 ABC .

55. ABC
 $5:4:3$.

56. r, s, x



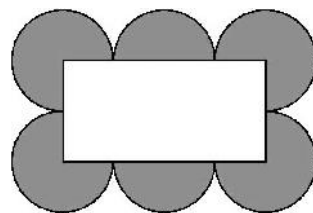
57. A, B, C
 $k(O, r)$. $\angle AOB = 70^\circ$ $\angle BOC = 90^\circ$,
 $\angle ABC$ ABC ,



58. $100,48 \text{ cm}^2$.
 $(f \approx 3,14)$.

59. 64 cm^2 .

60. 24 cm ,
 $2:1$.

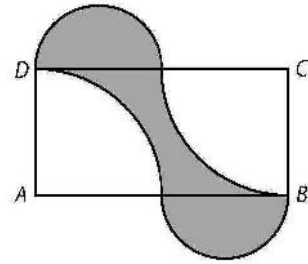


61. $r = 8 \text{ cm}$
?

62.)

$ABCD$ (

4 cm
 4 cm .



63.

$a = 6\text{ cm}$

64.

$r = 60^\circ$

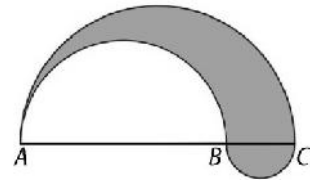
65.

AB, BC, AC

()

$12f\text{ cm}$

AB
 BC ,



66.

$l = 5f\text{ cm}$

$r = 10\text{ cm}$.

67.

8 cm^2 .

68.

65 cm .

500 ?

69.

$r = 6\text{ cm}$

15

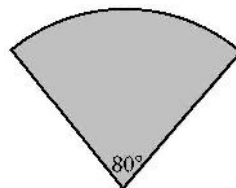
70.

$r = 6\text{ cm}$

1:4.

71.

$$2f \text{ cm}^2.$$



72.

$$3,6 \text{ cm}$$

3.

73.) $(x + y)^2 + (x - y)^2 = 2(x^2 + y^2)$.
) $2x^2 + 98$

74. :
) $2x(2x + 3) - 3x$,) $-3(1 - x^2) + 2x^2$,
) $5(2x^2 + x - 3) - 3x$,) $-3x(1 - x) + 6x$.

75. :
) $(a + 3)(-3a + 2)$,) $(2x - 3)(-3x + 1)$,
) $(2a - 3)^2 - (2a + 3)^2$.

76. :
) $4a^2 - 4b^2 - 2a + 2b$,) $3a^4 - 4 + a^2$,
) $x^4 - 2x^2y^2 + y^4 - 25x^2 + 25y^2$.

77. $A = 4x^2 - 3x + 6$ $B = 3x - 2$ $2A - 3xB - 4$.

78. :
) $-3a + 2$ $1 - 6a$,) $-x + 5$ $2x + 2$.

79. :
) $(3x^2 - 5x)(x - 4) - 2x(-3x^2 + 4x - 1)$,

$$) -5a(-2a^2 + 4a - 3) - (a^2 - 5a)(2a - 1).$$

80.

$$) -(a - 2)^2 - (a + 1)(3a + 4),$$

$$) 5(x - 1)(2x + 2) - (x - 5)^2.$$

81.

$$) (a + 4)^2 - (2a - 1)^2,$$

$$) a^3 - a^2 + a - 1,$$

$$) x^2 - 4x + 3.$$

82.

$a^2 + 6a + 1$	$2a(a + 1)$	$(a + 1)(a - 1)$
	$(a + 1)^2$	
		$(a - 1)^2$

83.

$$A = 4a - 2, B = -3a^2 + 2, C = 3a^2 + 4a + 1. \quad -$$

$$) A(B + C),$$

$$) B(C - A).$$

84.

$$: m = 3k + 1, 5; n = 4k + 2; p = 5k + 2, 5. \quad -$$

85.

$$a + 2 \quad 1 - 5a. \quad 5a^2 - a + 3$$

86.

$$x^3 + 2x^2 - x - 2.$$

87.

$$: (3m - 2n)^2 - (2m - 3n)^2.$$

88.

:

) $3,9^2 + 2 \cdot 3,9 \cdot 6,1 + 6,1^2$,) $93,31^2 - 6,69^2$,) $211 \cdot 189$.

89. $(5+x)(x-2) = x(x+2)$,
 $0,01x^2 - x + 25$.

90. $(x+4)(2-x) + x^2 = 16$:
) $2x+1$,) $(2-x)^2$,) $2(x+1)^2$.

91. :
) $\frac{8}{5}x^2 + 7x = 0$,) $16x^2 - 9 = 0$,) $x^2 + x + 0,25 = 0$.

92. :
) $0,25x^2 = 9x$,) $0,04x^2 = 25$,) $100x^2 = 20x - 1$.

93. :
) $(a-2)(a+1) = 0$,) $b^2 - 81b = 0$,) $b^3 - 6b^2 + 9b = 0$.

94. :
) $3(2x-4) - 2(-3x+1) = 0$,
) $2(x-3) + 5(2x-1) = 9$.

95.
) $(3x-2)^2 - (3x-2) = 0$,
) $2a^2 - 14 = 4$,
) $4a^2 + 4a + 5 = 4$.

96. :
) $(2x-5)^2 + 7x = (2x-1)(2x+1)$,
) $(3x+5)^2 - x = (3x-2)(3x+2)$.

97. :
) $x(x-1) + x(x+2) = 0$,

) $x^2 - 256 = 0$.

98.

?

110.

99.

130.

?

100.

o

15,2.

3,

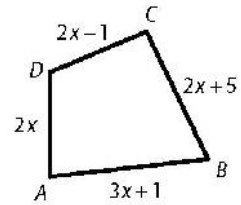
2,

40.

?

101.

50 cm.



102.

a b :

) $a^2 - 4a + 5 > 0$,

) $a^2 + b^2 \geq 2ab$,

) $(a+b)^2 \leq 2(a^2 + b^2)$.

103.

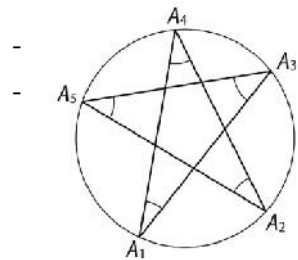
:

) $(5-x)(x-2) + x(x-2) > 0$,

) $(5+x)(x-2) > x(x+2)$.

104.

A_1, A_2, A_3, A_4, A_5



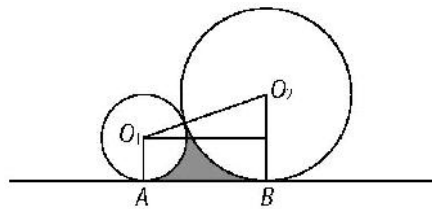
105.

$9f \text{ cm}^2$.

106. $162\sqrt{3} \text{ cm}^2$.

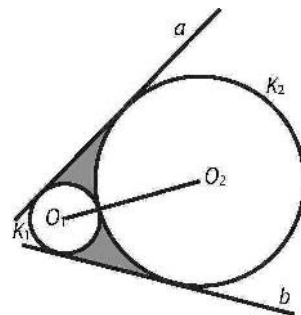
107. 5 cm .
 $4f \text{ cm}^2$.

108. $k_1(O_1, 1 \text{ cm})$ k_2
 $(O_2, 3 \text{ cm})$ -
 p A
 B ().



109. 9 cm ,
 21 cm .

110. $K_1(O_1, 1 \text{ cm})$ $K_2(O_2, 3 \text{ cm})$
 (\quad) , a
 b -



111. 20 cm
 10 cm ().

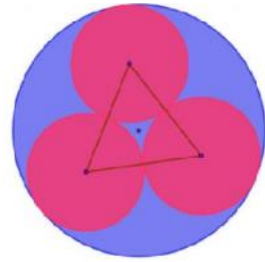


80 cm .

?

112.

(\quad).
 3 cm ,



113.

15 mm

12 mm ,

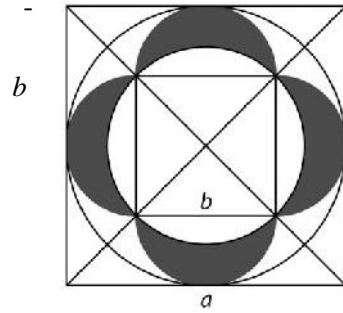
30 mm^2

?

114.

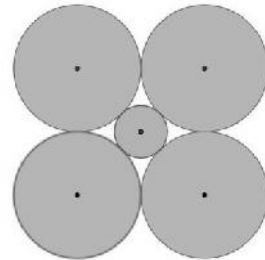
a

? (\quad).



115.

$r = 1$

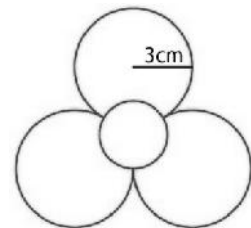


116.

$\sqrt{3} \approx 1,73$. (\quad)

$f \approx 3,14$

(\quad).



117.

6 cm .

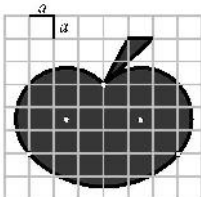
$28f\text{ cm}^2$

118. 2 cm. 45° $?$ $-$
 $?$

119. $37,68\text{ cm.}$ $-$
 $-$

$) 54^\circ,$ $) 210^\circ.$
 $f \approx 3,14.$

120. $35f\text{ cm}^2.$ 2 cm. 

121. $a = 1\text{ cm.}$ 

122. 4 cm. 

4.

4.1.

123. $) 4a^3 + 8a,$ $) b^4 + 3b^3 - b^2.$ $:$

124. : $x^2 - 10x + 25 = 0$.

125. :
) $a^2 - 81$,) $a^2 - 16 + (a - 4)$.

126. :
) $8a^3 - 2a^2$,) $4b^4 - b^3 + b^2$.

127. : $a^2 + 6a + 9 = 0$.

128. :
) $64 - b^2$,) $25 - b^2 + (5 + b)$.

129. :
) $4a^2 + 8a$,) $9a^2 + 16b^2 - 24ab$.

130. : $x^2 + 4x = -4$.

131. :
) $36a^2 - 625$,) $a^2 - 25 + (a - 5)^2$.

132. :
) $6a - 24a^2$,) $9a^2 + 16b^2 + 24ab$.

133. : $25x^2 - 60x = -36$.

134. :
) $256 - 16b^2$,) $81 - b^2 + (9 + b)^2$.

135. :

) $12a^2 + 4a^7 = 4a^2(\underline{\quad} + \underline{\quad})$,

) $4a^2 + 4a + 1 = (\underline{\quad} + 1)^2$,

) $x^2 - 64 = (x - \underline{\quad})(\underline{\quad} + \underline{\quad})$.

136. :

) $6a^2 + 4a^5$,) $12xy - 4y^2$.

137. :

) $16a^2 - 1$,) $9b^2 - 12b + 4$.

138. :

) $6x^6 - 3x^3 = 3x^3(\underline{\quad} - \underline{\quad})$,

) $a^2 + 4a + 4 = (a + \underline{\quad})^2$,

) $9a^2 - 1 = (\underline{\quad} + 1)(\underline{\quad} - \underline{\quad})$.

139. :

) $8x^6 - 4x^5$,) $3ab^2 + 9a^2$.

140. :

) $4a^2 + 12a + 9$,) $4a^2 - 144$.

141. :

) $99^2 - 1$,) $88^2 + 4 \cdot 88 + 2^2$.

142. :

) $4a^5 + 8a^3$,) $2a^2 - 128$.

143. :

) $(a+13)^2 = 0$,) $a(5a-7) = 0$.

144.

 :
) $12^2 - 88^2$,) $102^2 - 4 \cdot 102 + 2^2$.

145. :

) $6x^4 - 12x^5$,) $12x^2 - 3$.

146.

) $(7b-23)^2 = 0$,) $(3x-2)(2x-3) = 0$.

147. :

) $3x^5 - 6x^6 + 9x^4$,) $x^4 - \frac{1}{16}$.

148.

 :
) $\frac{125^2 - 25^2}{10^3}$,) 999^2 .

149. :

) $(x-3\sqrt{2})^2 = 0$,) $(a+\sqrt{3})(a-2\sqrt{2}) = 0$.

150. :

) $12x^4 - 6x^5 + 18x^3$,) $x^4 - \frac{1}{81}$.

151.

 :

-
160. $k(O, 4 \text{ cm})$. $AB = 4 \text{ cm}$. -
 -
 AB .
161. 6 cm , 150° .
 .
162. $k(O, 5 \text{ cm})$. $AB = 5 \text{ cm}$. -
 -
 AB .
163. 12 cm , 15° .
 .
164. $k(O, 3\sqrt{2} \text{ cm})$ $AB = 6 \text{ cm}$. -
 AB .
165. , ?
166. $P = 144f \text{ cm}^2$ $P' = 4P$. -
 ?
167. $l = 2,4f \text{ cm}$. -
 .
168. 135° 4 cm .

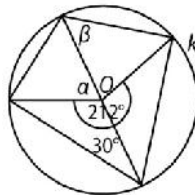
169. , ?

170. $P = 144f \text{ cm}^2$ $P' = 0,64P$. -
?

171. $l = 3f \text{ cm}$. -
.

172. 210° 3 cm .

173. r s .



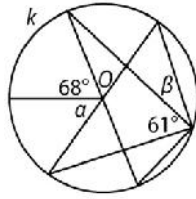
174. $O = 30f \text{ cm}$ $O' = 0,2O$. -
.

175. $1,2f \text{ cm}$. -
.

176. $0,8f \text{ cm}$. -
.

177.

r s



178.

$$P = 8f \text{ cm}^2 \quad P' = 6P .$$

179.

?

180.

ABCD

$$r = 5 \text{ cm} .$$

181.

182.

?

183.

ABC

$$r = 5 \text{ cm} .$$

184.

5.

185. :
) $4ab + 2b^2$,) $9 + x^2 - 6x$,) $25 - 16a^2$.

186. : $x(x - 2) + 3(x - 2) = 0$.

187. $k(O, 8 \text{ cm})$. $AB = 8 \text{ cm}$. -
 AB .

188. $k' = 36f \text{ cm}^2$, -
 $k'' = 2 \text{ cm}$ k' .
 $k' = k''$.

189. 100 cm^2 .

190. :
) $3a^2 - 6ab$,) $10a + 25 + a^2$,) $4x^2 - 9$.

191. : $3(x + 2) - x(x + 2) = 0$.

192. $k(O, 5 \text{ cm})$. $AB = 5 \text{ cm}$. -
 AB .

193. $k' = 36f \text{ cm}^2$, -
 $k'' = 2 \text{ cm}$ k' .
 $k' = k''$.

194. 32 cm .

195. :
) $4ab + 6b^3$,) $18 - 12x + 2x^2$.

196. : $3(x - 5) + x^2 - 25 = 0$.

197. $AB = 8 \text{ cm}$ $BC = 6 \text{ cm}$.

198. k' $36f \text{ cm}^2$, -
 k'' k' . -
 k' k'' .

199. 5 cm .
 $4f \text{ cm}^2$.

200. :
) $9a^3 - 6ab$,) $2a^2 + 20a + 50$.

201. : $x^2 - 4 + 3(x + 2) = 0$.

202. $AB = 5 \text{ cm}$ $BC = 13 \text{ cm}$.

203. k' $36f \text{ cm}^2$, -
 k'' k' . -
 k' k'' .

204. 13 cm .
 $12f \text{ cm}$.

205. :
) $2a^2 - 20a^2$,) $a^2 - 81$,) $9 - 6x + x^2$.

206. .
 68° .

207. -
 16 cm .

208. $2f \text{ cm}^2$.
 $r = 3 \text{ cm}$.

209.) : $2x^2 \cdot \frac{1}{6}x \cdot 9x^4 + (-3x^2)^3 \cdot \frac{2}{9}x$.
)
 $-a + 1$ $2a - 1$ $-5a^2 - a + 1$.

210. :
) $14x^3 + 2x^2$,) $1 - 16a^2$,) $x^2 + 10 + 25$.

211. .
 35° .

212. -
 12 cm 16 cm .

213. $6f \text{ cm}^2$.
 $r = 4 \text{ cm}$.

214.) $6a^2 \cdot \frac{1}{2}a^3 \cdot 3a^4 + (\frac{1}{2}a^3)^2 \cdot 4a^3$.
) $a-1 \quad -2a+1 \quad -4a+3$.

215. :
) $6x-12y+18$,) $4a^2-144$,) $36-24+4x^2$.

216. A B -
 . -
 .

217. k k' -
 $a=12 \text{ cm}$.

218. $d=12 \text{ cm}$ $a=6 \text{ cm}$

219.) $a \quad b$:
 $(ax+b) \cdot 4x = 8x^2 - 12x$.
) $a \quad b$
 $(3x+a)^2 = 9x^2 + bx + 4$.

220. :
) $4ab-2ab^2+6a$,) $75-3a^2$,) $36a^2+12a+1$.

221. A B
 .
 .

222. $k \quad k'$
 $a = 12 \text{ cm} .$ -

223. $d = 12 \text{ cm} \quad a = 6 \text{ cm}$

224.) $a \quad b$:
 $(ax + b) \cdot 5x = 20x^2 + 15x .$
) $a \quad b$
 $(2x + a)^2 = 4x^2 - bx + 25 .$

225.) $2(x^2 - 4x + 3) - 3x(3x + 4)$.
) $12a - 18a^5 + 4a^2$.

226.
 $(2a - 2)^2 - (2a + 1)(2a - 3) = 15 .$

227. . -

228. $l = 4f \text{ cm} .$
 $s = 18^\circ$

229.) $-3x(2x - 3) + 5(x^2 - 2x + 8)$.
) $2x^4 - 12x^3 + 6x^2$.

230. :

$$(x-1)(x+3) - (x-5)^2 = -2.$$

231.

232.

$$l = 6f \text{ cm.}$$

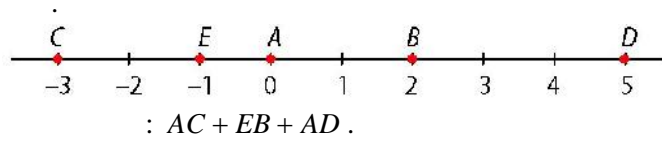
$$s = 36^\circ$$

IV

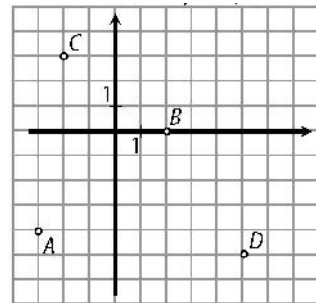
1.

1. : $A(-2), B(3), C(-\frac{5}{2})$.

2.



3.

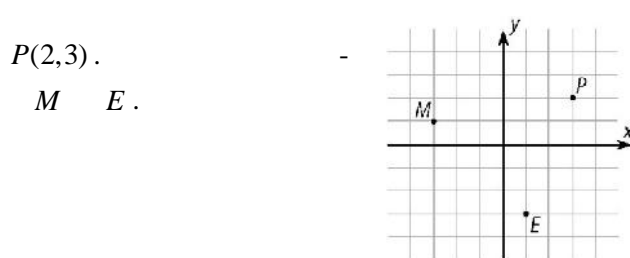


4. xOy : $A(3,1), B(-1,4), C(-2,-3) D(0,5)$.

5.



6.



7. A, B, C :
-) $A(-3, -2), B(3, 1), C(6, 5)$,) $A(-1, 2), B(-1, 1), C(6, 2)$,
) $A(1, 2), B(-3, -1), C(-6, 2)$,) $A(-2, -2), B(3, -1), C(6, 3)$.

8. $A(0, 3), B(6, 3), C(3, 7)$,
 $D(6, -2), E(-1, -3)$. ABC, ADB, AEB

9. x, y, x
 $(x + 5) : 45 = 30 : y$.

10. 3 cm .
 $1 : 300000$.

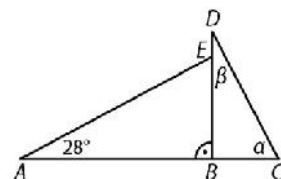
11. 12 cm .
 $1 : 200000$.

12. $4, 400 \text{ g}, 600 \text{ g}$ -
 $\frac{1}{2} \text{ kg}, 500 \text{ g}$.
) ,) ,) .

13. $100, 8, 135$
 $) 350 \text{ km},) 50 \text{ km}$.
 :

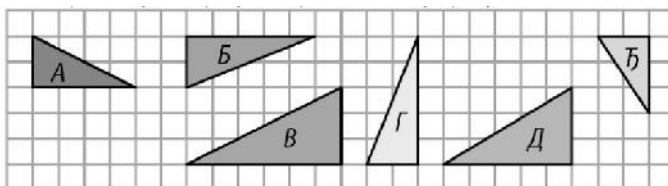
14. 10% . $10, ?$ 120

15. ABE, DBC .
 r, s .



16. 5 cm 12 cm ,
 15 cm 36 cm ?

17.
 ?



2.

18. $A(-2,3)$, $B(-1,-2)$, $C(0,-1\frac{5}{6})$, $D(-2\frac{2}{5},0)$, $E(-2,\sqrt{5})$, $F(-\sqrt{9},-\sqrt{10})$.

19. x y
 :
 $(3,y) = (x,4)$, $(\frac{3+x}{4}, \frac{y+1}{2}) = (5,4)$, $(\frac{2+3x}{2}, \frac{4y-1}{3}) = (x,y)$.

20. AB CD -
 $A(-1,4)$, $B(3,6)$, $C(5,-2)$, $D(-1,4)$.
 ?

21. $A(2,5)$. $B(-2,5)$, $C(-2,-5)$ $D(2,-5)$ -

22. $A(3,3)$,
 $B(7,-3)$, $C(-7,-2)$?

23. $ABC : A(-2,0)$, $B(4,0)$,
 $C(0,5)$.

24. $A(-1,2), B(0,0), C(2,1)$ $ABCD$. -
 D O .

25. $A(-1,-3) B(3,1)$. -
 $A' B'$
 $A B$ $y = x$. -
 $ABB'A'$ 1 cm .

26. $A(-2,-1) B(1,4)$. -
 $C D$
 $ABCD$ $y = 3$. -
 1 cm .

27. x :
 $(2+x):1 = 4:5$, $\frac{3-x}{3} = \frac{\frac{1}{2}}{\frac{3}{5}}$.

28. AB C $3:5$, D
 $5:7$. AB ,
 $CD = 7\text{ cm}$.

29. $3,5\text{ km}$,
 $1,4\text{ cm}$.

30. 40% , 50%
 33 .
 ?

31. ,
 10 .
 $)$?
 $)$ 50%
 ?

32. 65 kg , 80 kg .
 ()
 ?

33. 20 cm 8 m . $10 \text{ cm} \times$
 2 m 25 cm ?

34. 1080 . 200 km 36
 250 km , 6
 ?

35. 15 1500 .
) 25 3750 .
) 20 10 ?

36. 35% 12%
 , 25%
 1450000 .

37. 13 ha , ‘
 $15:7:4$, 6 ha , ‘
 $8:7:3$. ‘ $17,1$,

38. $\frac{2}{5}$. -
 ?

39.

600

450

?

140

40.

ABC ($AB = BC$) 21 cm .

$A'B'C'$ 4 cm ,

5 cm .

41.

ABC $AB = 24\text{ cm}$ $AC = 10\text{ cm}$.

M

AB

$AM : AB = 1 : 8$,

K

AC

$AK : KC = 2 : 3$.

ABC AMK ?

ABC AMK

?

3.

42.

N $M(5,1), N(x,-3)$

$MN = 4$.

43.

$A(2,1), B(6,1), C(2,4)$.

44.

: $A(-5,0), B(0,-3)$,

$C(4,0)$ $D(0,6)$.

45.

C D

$M(1,3)$

$x -$

$y -$

1 cm

:

)

MCD ,

)

CC'

MCD .

46.

$A(-2,-2)$ $C(3,1)$.

$B(x,y), y > 0$

AC

$AC : AB = 1 : 4$.

47. :
) $7,5:8=3:x$,) $(x+2):(x+3)=\frac{2}{5}:\frac{1}{2}$,) $\frac{x^2+5x}{3}=\frac{x^2-3x}{2}$.
48. $\frac{p}{q}=\frac{r}{s}$:
) $\frac{p+q}{q}=\frac{r+s}{s}$,) $\frac{p}{q}=\frac{pr}{qs}$,) $\frac{p}{q}=\frac{p+r}{q+s}$?
49. 50%,
 2375 cm^3 .
50. 29355
 4^8 , 10^{14} , 20^9 ,
 10^{20} , ?
51. 888 : 1110
 ?
52. 18
 ?
53. 2900 : 30%.
 ?
54. 13300
 11, 12, 15
 ?
55. 3, 7, 12
 .

56. . : 11 9 5 4 .
) ,)
 ?
57. . 150 g 20%
 , ?
58. . 10%
 , 10%
 ?
59. 12 , 18 .
 ?
60. , -
 4:5,
 3:4. 1500
 , ?
61. 75% 2 -
 87,5% ?
62. 10%, 10%. 16200 .
 .
63. 10 -
 10
 , .
 ?

64. $\frac{5}{16}$ 10 .
) $\frac{1}{2}$.
) 8 ?
65. $\frac{3}{3}$ $\frac{4}{5}$ 7200 .
 „ “?” -
66. 120 . 25 l .
 10% -
 1,5 l .
 ?
67. 1:2 .
68. ABC .
 $PQRS$ $P \in AB, Q \in AB, R \in BC, S \in AC$ $PQ:QR=3:2$.
69. $MN = 72$ cm a, b, c
 $5:4:3$.
 ?
70. E RS $PQRS$.
 QE PR ?
71. A, B, C D
 $AB:BC=2:5$ $BC:CD=3:8$. $AB=6$ cm , -
 BC CD .
72. S MN 36 cm
 $4:5$. SN .

73. $13\text{ cm}, 1\text{ cm}, 24\text{ cm} .$ -
 $15\text{ cm}^2 .$

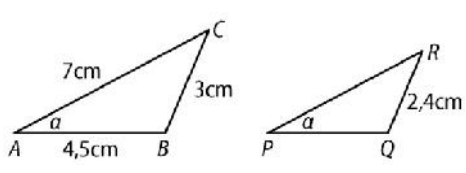
74. $1,2\text{ m}, 240\text{ cm}, 15\text{ dm} .$
:
) $3:5 ,$
) $32\text{ dm} ,$
) $34\text{ cm} ,$
) $4,5\text{ dm} .$ -

75. $a = 72\text{ cm}, b = 54\text{ cm} \quad c = 63\text{ cm} ,$
 $74\text{ cm} .$ -
 .

76. $12\text{ cm}, 16\text{ cm} \quad 24\text{ cm} .$ -
 $24\text{ cm} .$
-
 .

77. $13\text{ cm}, 13\text{ cm} \quad 24\text{ cm} .$ -
:
) $13\text{ cm} ,$) $24\text{ cm} .$

78. $ABC \quad PQR$
 () . -
-
 $PQ \quad PR$
 $PQR .$ -



79. $ABCD \quad AB = 16\text{ cm}, CD = 8\text{ cm}$
 $h = 3\text{ cm} .$ $AD \quad BC \quad G$ -
 $FE \quad ABF .$
) $AF \quad ABF .$

) $FE \parallel AB$.

80. $a = 5 \text{ cm}, b = 8 \text{ cm}, c = 12 \text{ cm}$.

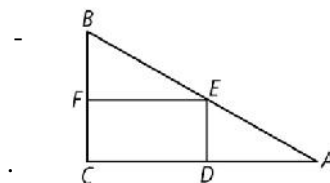
$b' = c'$
 $a' = 8 \text{ cm}$.

81. ABC

$CA = 8 \text{ cm} \quad BC = 6 \text{ cm}$

$CDEF$ ().

$CD : DE = 2 : 1$,



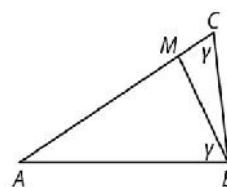
82. $AC \parallel BC$ ABC

M $MC = 2 \text{ cm}$
 8 cm

$\angle MBA = \angle ACB$.

$AM =$

AB ().

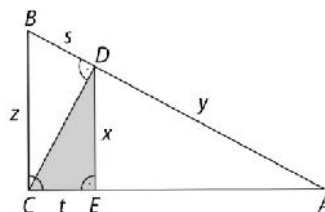


83. ABC

C .

CDE

$z = 12 \text{ cm} \quad s = 6 \text{ cm}$ ().



4.

4.1.

84. $x \quad y \quad y = 3x$.

85. $5,2 \text{ kg} \quad 442$.

$3,4 \text{ kg}$.

86. $0,75 \quad 44 \quad 0,5$.

?

87. 2, 4, 5, 6 ?

88. $x \cdot y = 2x$.

89. $5,2 \text{ kg}$ 390 .
 $1,5 \text{ kg}$.

90. 0,5 32 0,75 ?

91. 3, 4, 6, 8 ?

92. $x \cdot y$
 $y = \frac{2}{3}x$.

93. 8 m^2 3 kg .
 35 m^2 ?

94. $3a = 5b$.

95. $x \cdot \frac{1-2x}{1,2} = \frac{7+5x}{7,5}$.

96. $x \cdot y$
 $y = \frac{1}{2}x$.

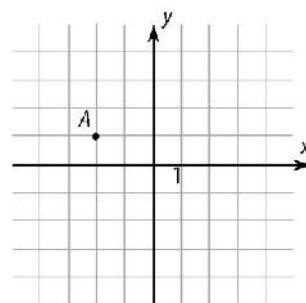
97. 2 m^2 1 kg .
 15 m^2 ?

98. $4x = 7y$.

99. $x \frac{2,4}{2x+4} = \frac{3,2}{3-2x}$.

100. $A(-2,1), B(-2,5), C(4,x)$.
 x ABC -
 C . A B .

101. A
 $($ $)$.
 $x -$.

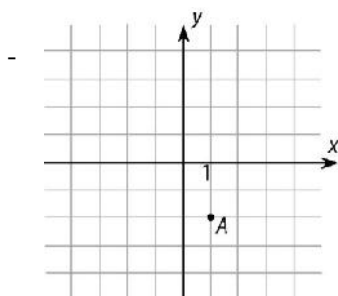


102. $150,$ $?$ $3:5$.

103. $A(2,3), B(-3,y), C(2,1)$.
 y ABC
 B . A C .

104. $104,$ $?$ $3:5$.

105. A
 $($ $)$.
 $x -$.



106. $AB: A(2, -4), B(-2, 0)$.
) C AB .
) AB
 1 cm.

107. $A(2, -4), B(-2, 0) D(-2, -4)$. -
 ABD -
 1 cm.

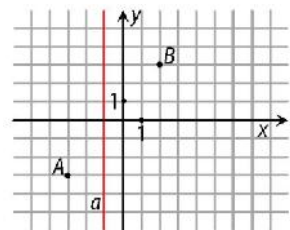
108. . 7500
 , 8100 .

109. $AB: A(2, 4), B(-4, -2)$.
) C AB .
) AB
 1 cm.

110. $A(2, 4), B(-4, -2) D(2, -2)$. -
 ABD -
 1 cm.

111. . 6250
 , 5750 .

112. $A B$ a ().
 $A' B'$ $A B$
 a .



$AA'BB'?$
 $1\text{ cm}.$

-

113.

$88\text{ cm}.$

$3:4$

114.

45

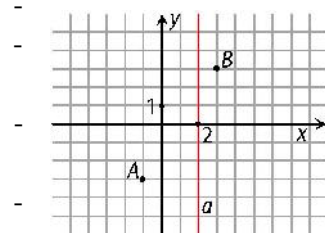
18

115.

$A\ B\ a(\)$.

$A'\ B'\ a.$

$AA'BB'?$



$1\text{ cm}.$

116.

$80\text{ cm}.$

$3:5$

117.

45

18

4.2.

118.

$ABC\ 5\text{ cm}, 7\text{ cm}, 8\text{ cm},$

$A'B'C'\ 35\text{ cm}, 56\text{ cm}, 49\text{ cm}.$

?

-
119. $A \quad B \quad EM = 8 \text{ cm}$
 $EA : AB : BM = 1 : 2 : 3.$
120. $ABC \quad A'B'C' \quad \angle B = 82^\circ,$
 $\angle C = 45^\circ, \angle A' = 55^\circ, \angle C' = 45^\circ.$
121. $A \quad B \quad EM = 10 \text{ cm}$
 $EA : AB : BM = 3 : 2 : 1.$
122. $ABC \quad 5 \text{ cm}, 7 \text{ cm}, 8 \text{ cm},$
 $A'B'C' \quad 21 \text{ cm}, 20 \text{ cm}, 24 \text{ cm}.$
 ?
123. $ABC \quad A'B'C' \quad \angle A = 35^\circ,$
 $\angle B = 97^\circ, \angle A' = 35^\circ, \angle C' = 48^\circ.$
124. $AB = 10 \text{ cm} \quad M \quad AB : BM$
 $= 7 : 3.$
125. $ABC \quad A'B'C' \quad :$
 $AB = 4 \text{ cm}, BC = 5 \text{ cm}, AC = 2 \text{ cm}, A'B' = 6 \text{ cm}, B'C' + A'C' = 10,5 \text{ cm} ?$
126. $12 \text{ cm}, 18 \text{ cm}, 20 \text{ cm}.$
 20 cm
 .
127. $AB = 12 \text{ cm} \quad M \quad AB : BM$
 $= 2 : 7.$

128. $\triangle ABC \sim \triangle A'B'C'$:
 $AB = 8 \text{ cm}, BC = 5 \text{ cm}, AC = 4 \text{ cm}, A'B' = 6 \text{ cm}, B'C' + A'C' = 6 \text{ cm} ?$

129. $12 \text{ cm}, 18 \text{ cm}, 20 \text{ cm} .$
 12 cm

130. $72 \text{ km} .$
 $1 : 500000 .$

131. $\triangle ABC$ 25° 67° , -
 $\triangle DEF$ 67° 78° . ?

132. $\triangle ABC$ $a = 12 \text{ cm}$ $b = 18 \text{ cm} .$
 $\triangle A'B'C'$
 $\triangle ABC$
 $6,4 \text{ cm} ?$

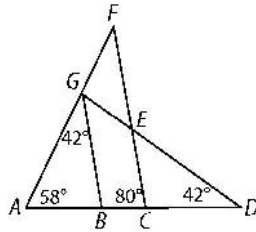
133. $12 \text{ cm} .$
 $1 : 500000 .$

134. $\triangle ABC$ 11° 85° , -
 $\triangle DEF$ 74° 11° . ?

135. $\triangle ABC$ $a = 12 \text{ cm}$ $b = 18 \text{ cm} .$
 $\triangle A'B'C'$
 $\triangle ABC$
 $8,4 \text{ cm} ?$

136.

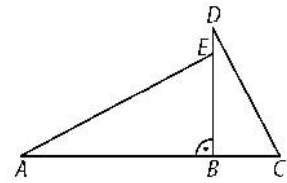
ABG .



137.

().
 $BD = 3 \text{ cm}$

$ABE \cong DBC$
 $AB = 4,5 \text{ cm}$, $BC = 1,6 \text{ cm}$
 BE .



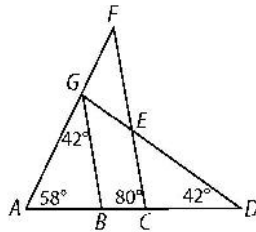
138.

12 cm ,

8 cm
 24 cm 18 cm .

139.

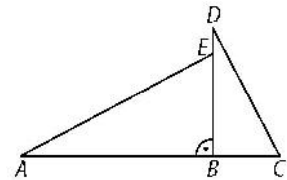
CDE .



140.

().
 $BD = 3 \text{ cm}$

$ABE \cong DBC$
 $AB = 4,5 \text{ cm}$, $BC = 1,6 \text{ cm}$
 BE .



141.

26 cm ,

10 cm
 36 cm 15 cm .

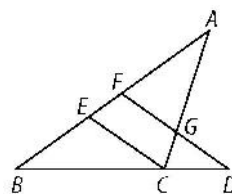
142.

$40^\circ, 75^\circ$	$40^\circ, 65^\circ$		
$120^\circ, 40^\circ$	$40^\circ, 100^\circ$		
$90^\circ, 40^\circ 30'$	$40^\circ 30', 49^\circ 30'$		
$56^\circ, 56^\circ$	$68^\circ, 68^\circ$		

143.

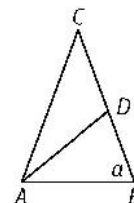
$$BC = CA, BE = EC, EC \parallel FG.$$

$\angle BCE$?



144.

ABC ABD
 $AC = BC, AB = AD.$ $AC = 16\text{ cm}$ $BD = 9\text{ cm},$
 $AB.$

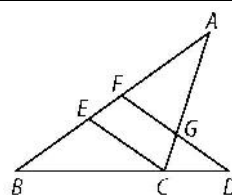


145.

$62^\circ, 54^\circ$	$54^\circ, 36^\circ$		
$105^\circ, 25^\circ$	$25^\circ, 50^\circ$		
$90^\circ 30', 36^\circ$	$63^\circ, 90^\circ 30'$		
$62^\circ, 56^\circ$	$62^\circ, 62^\circ$		

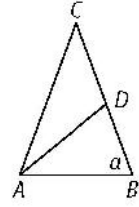
146.

$$BC = CA, BE = EC, EC \parallel FG.$$



AEC ?

147. $\triangle ABC$ $\triangle ABD$:
 $AC = BC, AB = AD.$ $AB = 12\text{ cm}$ $AC = 20\text{ cm},$
 $BD.$



5.

148. $\triangle ABC$: $A(3,0), B(5,0), C(0,4).$

149. 16698 14520 ,
?
?

150. 100 12 88 -
 250 -
?

151. 6 cm $8\text{ cm}.$
 9 cm

152. $\frac{x}{y} = \frac{2}{3}$ $\frac{x+y}{2x+3y}.$

153. $\triangle ABC$: $A(1,0), B(5,0), C(0,5).$

154. 10890 14520 ,
?
?

165. 24%
 . 10
 , 15%
 27 . ?
 , ?

166. 9 km/h 4 .

167. ABC $AB = 5 \text{ cm}, \angle ABC = 45^\circ$ $\angle BAC = 30^\circ$.
 AB M $AM : MB = AC : BC$.

168. $A(-2, -3), B(1, -3), C(3, 1), D(x, y)$ -
 $ABCD$. D .
 1 cm .

169. 21 50 8 .
) 12 ?
) 6
 ?

170. 2021
 10% . 2021
18000 2020 .
10% 2022
2022 ?

171. $a = 6 \text{ cm}, b = 9 \text{ cm}, c = 12 \text{ cm}$. -
 20 cm . -

172. 21 50 8 .
) 24 ?

-) ? 14
173. $A(-1, -1), B(2, -2), C(2, 2), D(x, y)$ -
 $ABCD$. D .
 1 cm .
174. 5% 21000 2021 . 2021 2020 .
 5% 2022 ?
 2022
175. $a = 6 \text{ cm}, b = 9 \text{ cm}, c = 12 \text{ cm}$. -
 -
 3,6 cm .
176. $A(1, -4), C(6, -4)$ $B(x, y)$ -
 B . C .
 2 cm .
177. 8 , 6 .
 17000 . ?
 ,
178. 660000 .
 10
 15% . 60000 ,
 ?
179. 2:9 . $a = 8 \text{ cm}$ $b = 6 \text{ cm}$,
 .

180. $A(-2, -2), C(-2, 4)$ $B(x, y)$ C .
 B . 2 cm .

181. 8 , 6
 34000 , $?$

182. 400000 .
 5
 10% , 60000 ,
 $?$

183. $5:3$. $a = 25\text{ cm}$ $b = 20\text{ cm}$.

184. $r = 10\text{ cm}$
 $a = 12\text{ cm}$ x .

185. $7:4$.
 45 cm ,

186. $A(-2, 2), B(6, 2), C(x, 6)$
 ABC (AB) .
 x C ,
 1 cm .

187. $\frac{2}{7}$ 6 .
 $\frac{8}{9}$.

188. 1,5 30 ,
 31,5 .
 6
 5%, 8%.
 10 ?

189. $r = 10 \text{ cm}$
 $a = 16 \text{ cm}$ x .

190. 4:3 .
 24 cm , -
 .

191. $A(3,0), B(3,8), C(-1,y)$
 ABC (AB)
 C ,
 1 cm .

192. $\frac{4}{9}$ 6 .
 $\frac{2}{3}$.

193. 1,5 61 ,
 62,5 . -
 6
 5%, 8%.
 10 ?

V

1.

1. $9,50, 125, 144, 196, 200, 324, 400, 500 \quad 625.$

2. $\sqrt{10^2 - 2^2 \cdot 9}, \quad \sqrt{13^2 - 25}, \quad \sqrt{1 - \frac{3}{7}} \sqrt{1 - \frac{9}{16}}.$

3. $\frac{x^2}{2}.$
 $\frac{1}{2}x + x, \quad \frac{3x^2}{4} + \frac{x^2}{4}, \quad \frac{x}{2} \cdot \frac{x}{2}, \quad 2x^2 - \frac{x^2}{2}, \quad \frac{1}{2}x \cdot x$

4. $a + b + c,$
 $a = 2^2 - (-3)^2 - (-2^2), \quad b = 5 \cdot \sqrt{(1 - \frac{16}{25})^2} \quad c = -\frac{10}{7} \cdot \sqrt{49}.$

5. $(\sqrt{64} + 6\sqrt{4})(\sqrt{49} - 4\sqrt{9}).$

6. $-2^2 + 2\sqrt{(-3)^2} - (-2)^2 + (-1+5)^2.$

7. $(\sqrt{25} + \sqrt{9}) \cdot (-2)^2 - 3^3.$

8. $5x^2 - y \quad x = 3 \quad y = 5.$

9. $a \quad b$
 $2x^2 - 3(2x - 5) - 8x - (-2 + 2x) = 2x^2 + ax + b$
 $x.$

10. $B - A \quad A = 3a^2 - 2a + 2 \quad B = 2a - 2.$

11. 0,01; 0,1; 0,2; 0,4;
0,25; 0,5; 2,5 :
 $\sqrt{0,25} = _$; $\sqrt{0,01} = _$; $\sqrt{1,44} = _$, $\sqrt{0,04} = _$; $\sqrt{6,25} = _$

12. $x(x-1) - x^2 + 3x = 12$.

13. 95% ?

14. 32000 .
5% . ?

15. 2% . -
12 m , -
?

16. AB $A(1,2)$ $B(4,6)$.

17. 3:5:4.

18.

19.

20.

) ,
) .

21. :

	8			
		10		
			90	
				3600°

22.

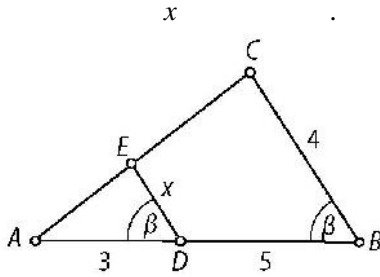
$ABCD$

$k(O, r)$.

$$\angle BOC = 120^\circ, \angle COD = 88^\circ, \angle DOA = 62^\circ,$$

$ABCD$.

23.



24.

5 cm ,

3 cm

25.

8 cm .

26.

$a = 20 \text{ cm}$ $b = 15 \text{ cm}$.

27.

$a = 16 \text{ cm}$

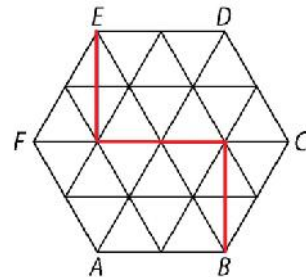
$b = 17 \text{ cm}$

28.

$ABCDEF$

().

12 cm



29.

) $5 \text{ cm}, 12 \text{ cm}, 17 \text{ cm}$,

) $4 \text{ cm}, 3 \text{ cm}, 4\sqrt{2} \text{ cm}$,

$$12 + 4 \cdot (-2^3) - 4 \cdot (-2)^4 + 3^5.$$

$$38. \quad : \frac{7^{3n+2}(7^n)^3}{(7^6)^n}.$$

$$39. \quad : \frac{2015^{10}}{5^8 \cdot 13^9 \cdot 31^{10}}.$$

$$40. \quad : \frac{(0,1^4 \cdot 0,1^2) \cdot (-0,1)^5}{(-0,1)^3}.$$

$$41. \quad a = 0,28 \cdot 10^{27}, \quad b = 32 \cdot 10^{25} \quad c = 2,62 \cdot 10^{26}$$

$$42. \quad :$$

$$\begin{aligned} &) 3xy^2 \cdot xy^2 - (2xy)^3, \\ &) a^8 b^7 : a^2 b^3 + (a^3 b^2)^2, \\ &) (5x^5 - x^5)^2 + (7x^2 - 8x^2)^5. \end{aligned}$$

$$43. \quad p(x) = 3 - 2x(1 + 2x) + 2x$$
$$q(x) = 1 - 4x^2.$$

$$44. \quad :$$
$$\frac{(1-2a)^2}{6} - a^2 - \frac{(a+1)(a-2)}{3}.$$

$$45. \quad a^3 + 2a^2 - 3a + 1 \quad a = -\sqrt{3}.$$

$$46. \quad :$$
$$0,2\sqrt{\frac{25}{4}} + 2\sqrt{0,01} - \sqrt{(-2)^2}.$$

$$47. \quad : 4a^2 - 7a - 2 \quad (4a+1)(a-2).$$

48. $A = -2a^2 + 1$ $B = a - 2$:

) $2A + 3aB$,

) $B^2 - A$.

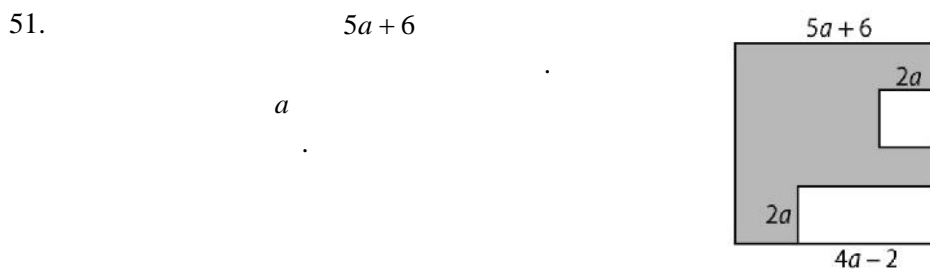
49. :

) $5(x-1) - 4(x-3) = -20$,

) $x(x-1) - x(x+3) = -20$,

) $x + (x-1)(x+1) - (x-3)(x+3) = -20$.

50. $\sqrt{2x-1} = x$.



52. 15%, 10%.

2295

?

53. 9 dl 90%

1 dl

54. - 4,8 5,04

- .

55. 182 cm 52 cm ,

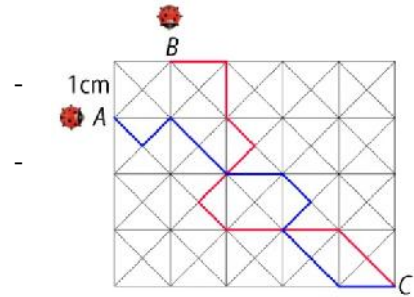
2,08 m . ?

56. 3:2:1. 3 kg , ?

57. 6 cm ? ,

58.

(
 A B).
 C .



59.

$M(2,2)$

AB

OAB O

60.

$A(3,-1)$

xOy

a

$(-1,1)$

$y -$

B

A

a .

61.

$A(-4,1), B(2,1), C(4,4)$

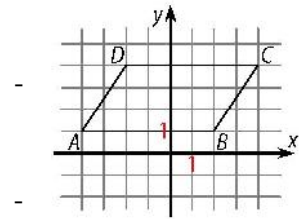
)

D .

)

$ABCD$

1 cm .



62.

63.

20

64.

A_1A_2

A_3A_4

$A_1A_2A_3...A_{10}$.

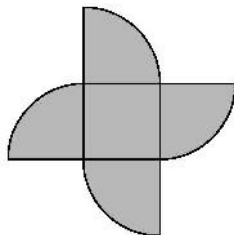
65. ? -

66. 2:3. -

67. $3\sqrt{2} \text{ cm}$. -

68. 5 cm . ABC 8 cm ,
 MNP 6 cm
 ABC . -

69. 17 ? -

70. 4 cm .  -

71. 9 cm , 21 cm . -

72. k' 9 cm , k'' 12 cm .
 k
 k' k'' . -

73. BCO $ABCD$ O .
 $\frac{3\sqrt{3}}{2} \text{ cm}^2$.
 $ABCD$. -

74.

35 cm .

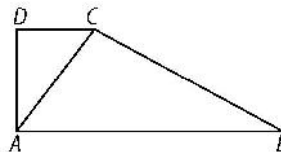
500 .

75.

$ABCD$

$AB = 21 \text{ cm}, AD = 8 \text{ cm}, DC = 6 \text{ cm} .$

$ABC .$



76.

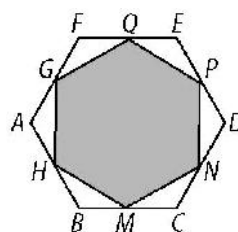
G, H, M, N, P, Q

FA, AB, BC, CD, DE, EF

$ABCDEF$ ().

$ABCDEF$

$GHMNPQ .$



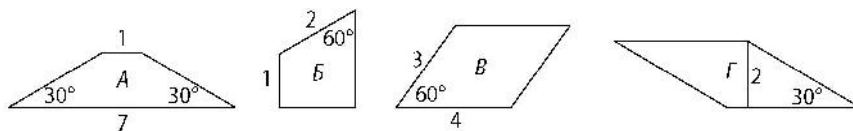
77.

: - , - -

, - - . - -

$4\sqrt{3} \text{ cm}^2 ?$

16 cm ?



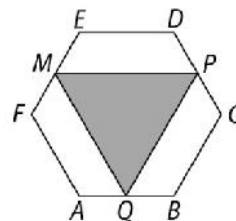
78.

$ABCDEF$

$MPQ ,$

M, P, Q

$AB, CD, EF ,$ ().



79.

$t = 6 \text{ cm}$

t

?

3.

80. $\frac{2^5+2^6+2^7}{2^8+2^9+2^{10}}$.

81. $:\frac{2^{10}+2^9+2^8}{4^2+4^3+4^6}$.

82. $2^{3000} \cdot 3^{2000}$.

83.

$$\left(\frac{4^{10} \cdot (-9)^{27} \cdot 12^{100}}{27^{50} \cdot (-2)^{220}}\right)^{2017} - \left(\frac{18^{100} \cdot 2^{100}}{(-6)^{200}}\right)^{2017} .$$

84. $a = 5 \quad b = 2$

$$\left(\frac{(-b)^{20}(ab)^{50}}{(2a)^{50}b^{25}} - \left(\frac{b^{20}(2b)^{20}}{(8b)^{15}}\right)^2\right)^{2018} .$$

85.

> <

$) 100^{10} _ 10^{100}, \quad) 2^{63} _ 4^{36},$
 $) 3^{46} _ 27^{15}, \quad) 3^{45} _ 5^{27} .$

86.

$$(2x-1)^2 - (3x+1)^2 + 10x ,$$

$$x = -\sqrt{5} .$$

87.

$x \quad \cdot \quad x^2 - 10x + 30 .$

88.

$:\quad$

	5	4	3	2	1	
	6	7	9	3	1	2

89. a, b, c $a > b$ x

$$x = \sqrt{\frac{a+c}{2} \cdot \frac{a-b}{2}}.$$

90. $a, b,$
 $a\sqrt{2} + b = \sqrt{(4 - 3\sqrt{2})^2} + 7.$

91. $M + N$
 $5x^2 + 2y^2 - 8y + 10x + 13 = M(x+1)^2 + N(y-2)^2.$

92. $(x-3)^2 - 13 = 36.$

93. $(x-2015)^2 - (x+2015)(x-2015) = 2015.$

94. 20% .
?

95. 24 . 10 -
?

96. 20% 120 ,
?

97. $\frac{2}{5}$ 3200 .

4000 ?

98. 3:4. -
,

6:7.

99. $11:5$ 80 10 5
 $?$

100. 20% 80%
 $?$

101. $5:4$ $2:3$ $7,4 \cdot 10^8$
 $?$

102. 360 50%
 10% 25%
 $?)$ $?)$

103. m a b $($
 $)$ $x : m = x + 5, a = x - 2,$
 $b = x + 10.$ x
 $65 \text{ cm}^2.$

104. $A(-2, -2)$ $B(4, -2)$ $-$
 $C(3, 2)$
 A' B' $A' B'$
 $ABA'B'.$

105. ABC $MNP.$
 $:$

$A(-5, -2), B(-2, -2), C(-3, 3), M(-1, 1), N(-1, 4), P(4, 2)$.

106. $A(1, -1) \quad B(8, -1)$
 $M(2, 1) \quad N(6, 1)$

)
)

1 cm .

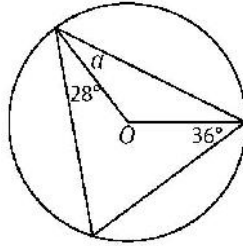
107. $A(-2, -2) \quad B(2, 2)$.

$AB \quad ABCD$,

$C \quad D$,

$ABCD$.

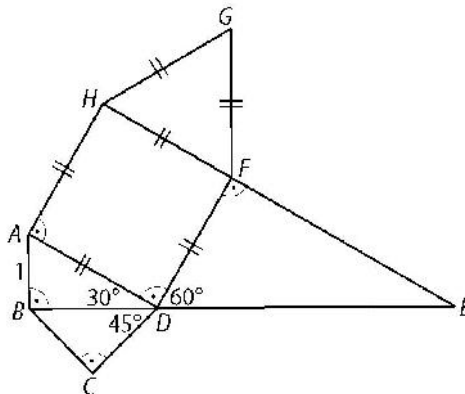
108. O . r .



109. 104 .

110. $ABCDEFGH$

:



111. 54 cm , $2:3:4$, $?$ -

112. $h = 12\sqrt{3}$

113. $?$ -

114. A, B, C, D, E , 15 , M , $\angle AME$.

115. $12f\text{ cm}^2$.

116. 12 cm .

117. 5 cm , $4\sqrt{5}\text{ cm}$.

118. $A_1A_2\dots A_6$, 8 cm , $A_1A_3A_5$.

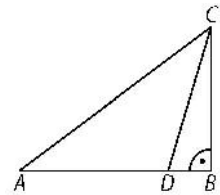
119. 32 cm^2 .

120.

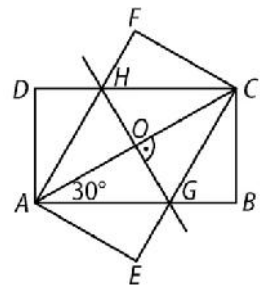
121. AB $ABCD$ 5 cm ,
 B AC 3 cm .

122. 60° ,
 $d = 20\text{ cm}$.

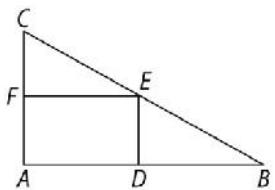
123. ADC ($AD = DC$)
 $A = 8\text{ cm}$ $BC = 6\text{ cm}$.



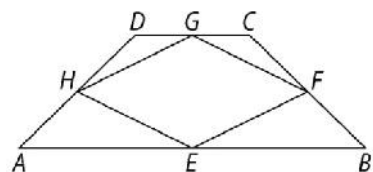
124. $ABCD$ $CFAE$
 AC . $AD = 6\text{ cm}$,
 $AEGBCFHD$.



125. ABC
 $ADEF$ (\quad).
 $AD = 9\text{ cm}$, $DE = 6\text{ cm}$ $AC = 10\text{ cm}$,
 ABC .



126. $ABCD$ (\quad)
 E, F, G, H
 AB, BC ,
 CD, DA
 $EFGH$



127.

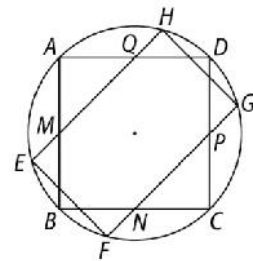
$ABCD$.

(

$r = 6 \text{ cm}$
 M, N, P, Q
 AB, BC, CD, DA
 E, H
 MQ

F, G
 NP .

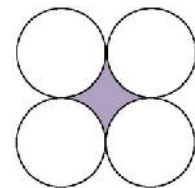
$EFGH$



128.

129.

10 cm



130.

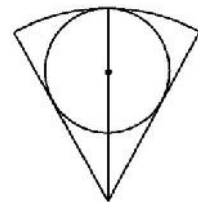
20%,

?

131.

() .

3:1,



132.

A B
 D () .

$\sphericalangle C = 90^\circ$

$12\sqrt{2}f \text{ cm}$,

AB .

