

XLIV-3

1.

20 cm ,
 4 cm , 4 cm ,
 a , b , c
 $a = b + 4$.

$$P = \frac{ab}{2} = \frac{b(b+4)}{2} \quad P = \frac{a+b+c}{2} r = \frac{(b+4)+b+20}{2} \cdot 4 = 4b + 48,$$

$$\frac{b(b+4)}{2} = 4b + 48, \quad b^2 - 4b - 96 = 0.$$

$$(b-2)^2 - 10^2 = 0, \quad \dots (b-12)(b+8) = 0.$$

$b-12=0$
 $b+8=0, \quad b=12 \quad b=-8, \quad b > 0,$
 $b=12 \text{ cm}.$ $a=b+4=16 \text{ cm}$ $L=a+b+c=48 \text{ cm}.$

1.

- 1)
- 2)
- 3) 20 cm ,
- 4) 4 cm
- 5) 4 cm ,

2), ... -

. -

?

2)

2.

20 cm .

4 cm, -

. a b , c -

a = b + 4 . , -

$$(b+4)^2 + b^2 = 20^2, \quad 2b^2 + 8b + 16 = 400.$$

$$b^2 + 4b - 192 = 0,$$

$$(b+2)^2 - 14^2 = 0,$$

$$(b-12)(b+16) = 0.$$

$$b+16=0, \quad b=12 \quad b=-16. \quad , \quad b > 0, \quad b-12=0$$

$$b=12 \text{ cm} . \quad , \quad a=b+4=16 \text{ cm} \quad L=a+b+c=48 \text{ cm} .$$

3.

ABC -

4 cm, 20 cm -

ABC 4 cm .

$$c = 20 \text{ cm}$$

$$a = b + 4 . , -$$

$$s = \frac{a+b+c}{2} = \frac{(b+4)+b+20}{2} = b+12,$$

$$P = sr = 4s = 4(b+12).$$

$$\begin{aligned}
 P &= \sqrt{s(s-a)(s-b)(s-c)} \\
 &= \sqrt{(b+12)(b+12-b-4)(b+12-b)(b+12-20)} \\
 &= \sqrt{96(b+12)(b-8)}.
 \end{aligned}$$

, $b+12 > 0,$

$$4(b+12) = \sqrt{96(b+12)(b-8)},$$

$$16(b+12)^2 = 96(b+12)(b-8),$$

$$b+12 = 6(b-8)$$

$$5b = 60,$$

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

, $a = b + 4 = 16 \text{ cm}$ $L = a + b + c = 48 \text{ cm}.$

4.

20 cm .

4 cm ,

. C', B', A'

AB AC, BC
 ABC ().

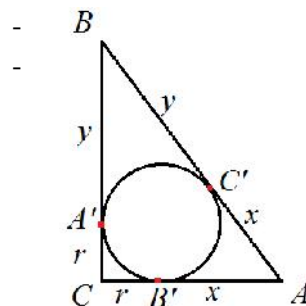
$$\overline{AB'} = \overline{AC'} = x, \overline{BC'} = \overline{BA'} = y, \overline{CA'} = \overline{CB'} = r.$$

$$, a = y + r, b = x + r, c = x + y,$$

$$L = a + b + c = (y + r) + (x + r) + c$$

$$= 2r + (x + y) + c = 2r + 2c$$

$$= 2 \cdot 4 + 2 \cdot 20 = 48 \text{ cm,}$$



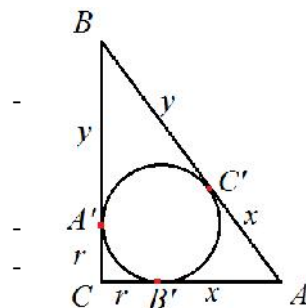
5.

4 cm ,

4 cm ,

. C', B', A'

AB AC, BC



ABC ().

$$\overline{AB'} = \overline{AC'} = x, \overline{BC'} = \overline{BA'} = y, \overline{CA'} = \overline{CB'} = r.$$

$$a = b + 4, c = x + y = b - r + a - r = b - 4 + b + 4 - 4 = 2b - 4.$$

$$a^2 + b^2 = c^2,$$

$$(b + 4)^2 + b^2 = (2b - 4)^2,$$

$$2b^2 + 8b + 16 = 4b^2 - 16b + 16,$$

$$b^2 = 12b.$$

, $b > 0$,

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

$$a = 12 + 4 = 16 \text{ cm}, c = 2 \cdot 12 - 4 = 20 \text{ cm} \quad L = a + b + c = 48 \text{ cm}.$$

1

6.

20 cm,

$$a \quad b \quad c = 20 \text{ cm}$$

ABC .

$$a^2 + b^2 = 20^2.$$

$a \quad b$

$$a < b.$$

$(a, b, 20)$

20

$(12, 16, 20)$,

$$a = 12, b = 16 \quad L = a + b + c = 48 \text{ cm}.$$

1

1.

1

1.

7.

4 cm,

a , b , c $r = 4$ cm

ABC .

$$a = y + 4, \quad b = x + 4, \quad c = x + y.$$

, x, y

4

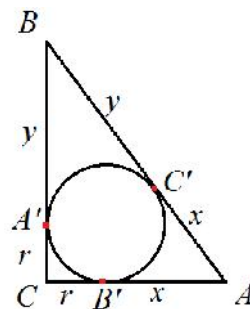
$$y > x.$$

$$(y + 4)^2 + (x + 4)^2 = (x + y)^2,$$

$$(x - 4)(y - 4) = 32.$$

$$\begin{cases} x - 4 = 1 \\ y - 4 = 32 \end{cases} \quad \begin{cases} x - 4 = 2 \\ y - 4 = 16 \end{cases} \quad \begin{cases} x - 4 = 4 \\ y - 4 = 8 \end{cases}$$

$$x = 5, y = 36; \quad x = 6, y = 20 \quad x = 8, y = 12.$$



) $a = 40$ cm, $b = 9$ cm, $c = 41$ cm $L = 90$ cm,

) $a = 24$ cm, $b = 10$ cm, $c = 26$ cm $L = 60$ cm,

) $a = 16$ cm, $b = 12$ cm, $c = 20$ cm $L = 48$ cm.