1.

a) $t^2 = (4+2)^2 + v^2$

b) $(4c)^2 + (2a)^2 = (3b)^2$

2.

a) $P = ?$

$P = \frac{a \cdot b}{2}$

$P = \frac{\sqrt{6} \cdot 2\sqrt{3}}{2}$

$P = \sqrt{18}$

$\boxed{P = 3\sqrt{2}}$

$a = \sqrt{6}$

$b = x$

$x^2 = (3\sqrt{2})^2 - \sqrt{6}^2$

$x^2 = 9 \cdot 2 - 6$

$x^2 = 12 \mid \sqrt{\ }$

$x = \sqrt{12} = \sqrt{4 \cdot 3}$

$\boxed{x = 2\sqrt{3}}$

b) $O = 20\,dm$

$d = ?$

$\boxed{d = a\sqrt{2}}$

$O = 4a$

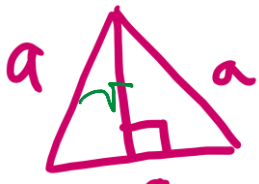
$4a = 20 \mid :4$

$\boxed{a = 5\,dm}$

$\boxed{d = 5\sqrt{2}\,dm}$

c) $O = ?$

$v = 2\sqrt{3}\,m$



$O = ?$

$\boxed{O = 3a}$

$O = 3 \cdot 4$

$\boxed{O = 12\,m}$

7.

$\boxed{v = \frac{a\sqrt{3}}{2}}$ $\boxed{P = \frac{a^2\sqrt{3}}{4}}$

$v = \frac{a\sqrt{3}}{2}$

$2\sqrt{3} = \frac{a\sqrt{3}}{2} \mid \cdot 2$

$4\sqrt{3} = a\sqrt{3} \mid :\sqrt{3}$

$\boxed{4 = a}$ $a = 4\,m$

d) $P = ?$

$P = a \cdot b$

$a = 2\sqrt{2}$

$b = c$

$c^2 = (4\sqrt{3})^2 - (2\sqrt{2})^2$

$c^2 = 48 - 8$

$c^2 = 40 \mid \sqrt{\ }$

$c = 2\sqrt{10}$

$P = 2\sqrt{2} \cdot 2\sqrt{10}$

$P = 4\sqrt{20}$

$P = 4 \cdot 2 \cdot \sqrt{5}$

$\boxed{P = 8\sqrt{5}}$

e) $P = ?$

$P = \frac{a \cdot v}{2}$

$v^2 = (2\sqrt{5})^2 - (2\sqrt{2})^2$

$v^2 = 20 - 8$

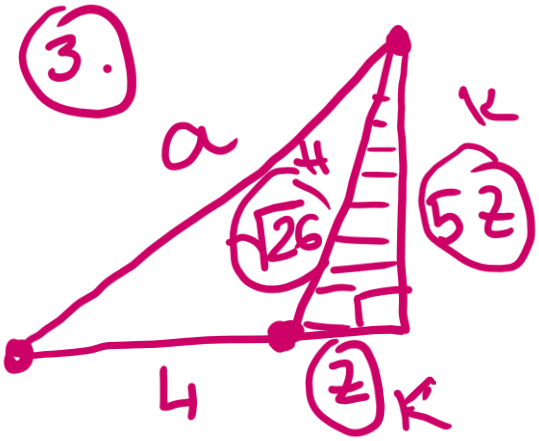
$v^2 = 12 \mid \sqrt{\ }$

$\boxed{v = 2\sqrt{3}}$

$P = \frac{4\sqrt{2} \cdot 2\sqrt{3}}{2}$

$\boxed{P = 4\sqrt{6}\,dm^2}$

3.



$z^2 + (5z)^2 = (\sqrt{26})^2$

$z^2 + 25z^2 = 26$

$26z^2 = 26 \quad / : 26$

$z^2 = 1 \quad / \sqrt{\ }$

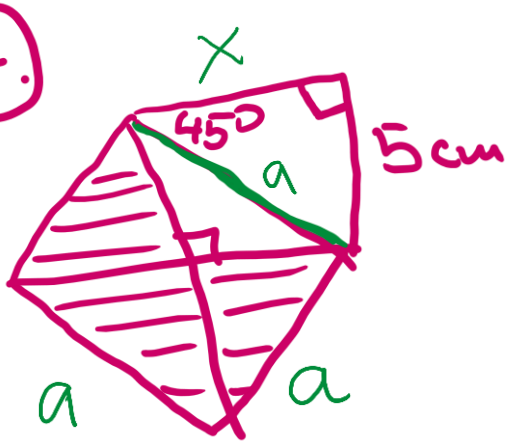
$\boxed{z = 1}$

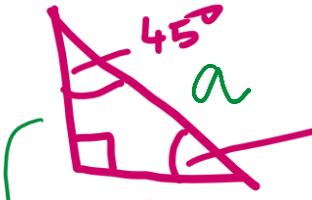
$a^2 = 5^2 + 5^2$

$a^2 = 50 \quad / \sqrt{\ }$

$\boxed{a = 5\sqrt{2}}$ $\left(a = \sqrt{50} = \sqrt{25 \cdot 2}\right)$

4.





△ je JEDNAKOKRAČAN

$x = 5$

$P = \frac{3}{4} P_{\square} \qquad P_{\square} = a^2$

a = DIJAG. KVADRATA

$\boxed{a = 5\sqrt{2}\ cm}$

$P = \frac{3}{4} a^2$

$P = \frac{3}{4} \cdot (5\sqrt{2})^2$

$P = \frac{3}{4} \cdot 25 \cdot 2$

$P = \frac{75}{2}$

$\boxed{P = 37.5\ cm^2}$

5. a)

$16^2 = 9^2 + 12^2$

$256 = 81 + 144$

$256 = 225$

Trokut je TUPOKUTAN RAZNOSTR.

b) $(2\sqrt{3})^2 = 12$

$6^2 = 36$

$(4\sqrt{3})^2 = 48$

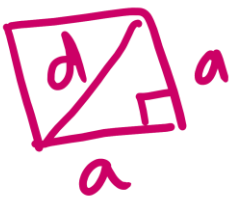
$12 + 36 = 48$

$48 = 48$ ✓

Da, Δ je PRAV.

6. $P = 50\ cm^2$

$d = ?$



$P = a^2$

$a^2 = 50 \mid \sqrt{\ }$

$\boxed{a = 5\sqrt{2}}$

$d = a\sqrt{2}$

$d = 5\sqrt{2} \cdot \sqrt{2}$

$d = 5 \cdot 2$

$\boxed{d = 10\ cm}$

7.

$v = \frac{a\sqrt{3}}{2}$

$P = \frac{a^2\sqrt{3}}{4}$

a) $a = 6\ cm, P = ?$

$P = \frac{36\sqrt{3}}{4}$

$\boxed{P = \frac{18\sqrt{3}}{2}\ cm^2}$

b) $a = 2\sqrt{3}\ m, P = ?$

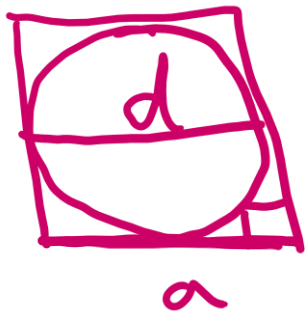
$P = \frac{a^2\sqrt{3}}{4}$

$P = \frac{(2\sqrt{3})^2 \cdot \sqrt{3}}{4}$

$P = \frac{4 \cdot 3\sqrt{3}}{4}$

$\boxed{P = 4\sqrt{3}\ m^2}$

8.



$d_o = a_\square$

$O = 12\pi$

$d_\square = ?$

$d\pi = 12\pi \quad /:\pi$

$d_\square = a\sqrt{2}$

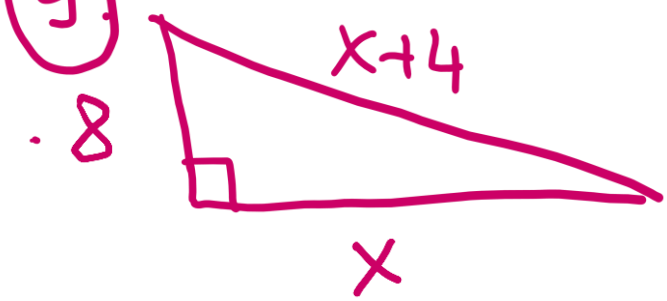
$\boxed{d_o = 12}$

$d_o = a_\square$

$a = 12$

$\boxed{d_\square = 12\sqrt{2}\,cm}$

9.



$O = ?$

$O = a+b+c$

$O = x + x+4+8$

$(x+4)^2 = x^2 + 8^2$

$x^2 + 2\cdot x\cdot 4 + 16 = x^2 + 64$

$x^2 - x^2 + 8x = 64 - 16$

$8x = 48 \quad /:8$

$\boxed{x = 6}$

$O = 2x + 12$

$O = 2\cdot 6 + 12$

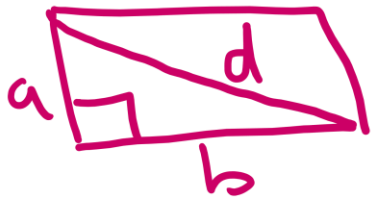
$\boxed{O = 24\,cm}$

ili

$\boxed{O = 8+6+10 = 24\,cm}$

10. $a:b=3:4$

$d=15\,cm$



$d^2=a^2+b^2$

$a=3k$

$b=4k$

$d^2=(3k)^2+(4k)^2$

$15^2=9k^2+16k^2$

$225=25k^2 \quad /:25$

$9=k^2 \quad /\sqrt{\ }$

$\boxed{k=3}$

$a=3\cdot 3=9\,cm$

$b=4\cdot 3=12\,cm$

$O=2a+2b$

$O=2\cdot 9+2\cdot 12$

$O=18+24$

$\boxed{O=42\,cm}$

11.

$O=4a$

$O=16\sqrt{5}$

$4a=16\sqrt{5} \quad /:4$

$\boxed{a=4\sqrt{5}}$

$O=16\sqrt{5}$

$f=4\sqrt{2}$

$P=?$

$P=\frac{e\cdot f}{2}$

$a^2=\left(\frac{e}{2}\right)^2+\left(\frac{f}{2}\right)^2$

$\left(\frac{e}{2}\right)^2=a^2-\left(\frac{f}{2}\right)^2$

$\left(\frac{e}{2}\right)^2=(4\sqrt{5})^2-\left(\frac{4\sqrt{2}}{2}\right)^2$

$\left(\frac{e}{2}\right)^2=100-8$

$\left(\frac{e}{2}\right)^2=92 \quad /\sqrt{\ }$

$$P = \frac{e \cdot f}{2}$$

$$P = \frac{4\sqrt{23} \cdot 4\sqrt{2}}{2}$$

$$P = 8\sqrt{46}\ m^2$$

$$\frac{e}{2} = \sqrt{92}$$

$$\frac{e}{2} = \sqrt{4 \cdot 23} \quad /\cdot 2$$

$$e = 2 \cdot 2\sqrt{23}$$

$$e = 4\sqrt{23}$$

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12. a) $a = 6$, $v = 10$

$$P = \frac{a \cdot v}{2}$$

$$P = \frac{6 \cdot 10}{2}$$

$$P = 30$$

b) $a = ?$, $v = 6$

$$a^2 = 3^2 + 4^2$$

$$a^2 = 25$$

$$a = 5$$

$$P = \frac{a \cdot v}{2}$$

$$P = \frac{5 \cdot 6}{2}$$

$$P = 15$$