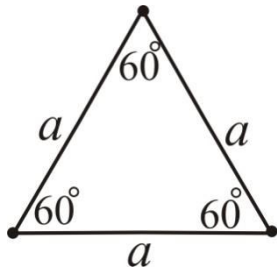
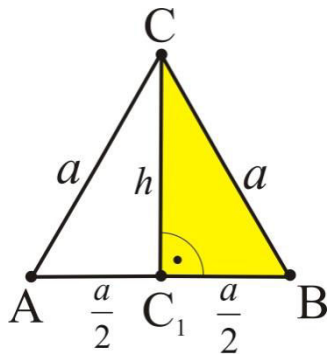


**Час број 33. : Пимена Питагорине теореме на једнакостранични троугао**



$$O = 3a$$



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

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

$$a^2 = \frac{a^2}{4} + h^2$$

$$P = \frac{1}{2} \cdot a \cdot h_a$$

$$h^2 = \frac{a^2}{1} - \frac{a^2}{4}$$

$$P = \frac{1}{2} \cdot a \cdot \frac{a\sqrt{3}}{2}$$

$$h^2 = \frac{4a^2}{4} - \frac{a^2}{4}$$

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

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

Троугао  $CC_1B$  је правоугли

катете :  $h$  и  $\frac{a}{2}$

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

хипотенуза:  $a$

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

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

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

**ЗАДАТАК 1:** У једнакостраничном троуглу страница  $a$  је старница троугла,  $h$  висина,  $P$  површина и  $O$  обим једнакостраничног троугла.

$a$	4 cm				$3\sqrt{2}cm$
$h$		$4\sqrt{3} cm$		6 cm	
$P$			$25\sqrt{3} cm$		
$O$					

Јадранка Михајловић

$$\frac{a = 4\text{cm}}{h, P, O = ?}$$

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

$$h = \frac{4\sqrt{3}}{2}$$

$$\boxed{h = 2\sqrt{3}\text{cm}}$$

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

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

$$P = \frac{\cancel{16}\sqrt{3}}{\cancel{4}^1}$$

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

$$O = 3a$$

$$O = 3 \cdot 4$$

$$\boxed{O = 12\text{cm}}$$

$$\frac{h = 4\sqrt{3}\text{cm}}{a, P, O = ?}$$

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

$$\frac{4\sqrt{3}}{1} = \frac{a\sqrt{3}}{2}$$

$$a\sqrt{3} = 2 \cdot 4\sqrt{3}$$

$$a\sqrt{3} = 8\sqrt{3} / : \sqrt{3}$$

$$\boxed{a = 8\text{cm}}$$

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

$$P = \frac{8^2\sqrt{3}}{4}$$

$$P = \frac{\cancel{64}\sqrt{3}}{\cancel{4}^1}$$

$$\boxed{P = 16\sqrt{3}\text{cm}^2}$$

$$O = 3a$$

$$O = 3 \cdot 8$$

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

$$\frac{P = 25\sqrt{3}\text{cm}^2}{a, h, O = ?}$$

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

$$\frac{25\sqrt{3}}{1} = \frac{a^2\sqrt{3}}{4}$$

$$a^2\sqrt{3} = 4 \cdot 25\sqrt{3}$$

$$a^2\sqrt{3} = 100\sqrt{3}$$

$$a^2 = 100$$

$$a = \sqrt{100}$$

$$\boxed{a = 10\text{cm}}$$

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

$$h = \frac{\cancel{10}\sqrt{3}}{\cancel{2}^1}$$

$$\boxed{h = 5\sqrt{3}\text{cm}}$$

$$O = 3a$$

$$O = 3 \cdot 10$$

$$\boxed{O = 30\text{cm}}$$

$$\frac{h = 6\text{cm}}{a, P, O = ?}$$

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

$$\frac{6}{1} = \frac{a\sqrt{3}}{2}$$

$$a\sqrt{3} = 12$$

$$a = 12 : \sqrt{3}$$

$$a = \frac{12}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$$

$$a = \frac{\cancel{12}\sqrt{3}}{\cancel{3}^1}$$

$$\boxed{a = 4\sqrt{3}\text{cm}}$$

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

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

$$P = \frac{16 \cdot \sqrt{9} \cdot \sqrt{3}}{4}$$

$$P = \frac{\cancel{16} \cdot 3 \cdot \sqrt{3}}{\cancel{4}^1}$$

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

$$\boxed{P = 12\sqrt{3}\text{cm}^2}$$

$$O = 3a$$

$$O = 3 \cdot 4\sqrt{3}$$

$$\boxed{O = 12\sqrt{3}\text{cm}}$$

Јадранка Михајловић

$$\frac{a = 3\sqrt{2}cm}{h, P, O = ?}$$

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

$$h = \frac{3 \cdot \sqrt{2} \cdot \sqrt{3}}{2}$$

$$\boxed{h = \frac{3\sqrt{6}}{2} cm}$$

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

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

$$P = \frac{9\sqrt{4}\sqrt{3}}{4}$$

$$P = \frac{9 \cdot \cancel{2} \cdot \sqrt{3}}{\cancel{4} \cdot 2}$$

$$\boxed{P = \frac{9\sqrt{3}}{2} cm^2}$$

$$O = 3a$$

$$O = 3 \cdot 3\sqrt{2}$$

$$\boxed{O = 9\sqrt{2}cm}$$

**Домаћи задатак:**

Збирка задатака:

**42. страна:**

88. задатак