

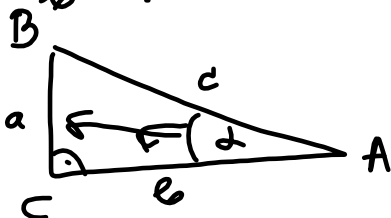
1.

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

$$\alpha = 75^\circ$$

$$a = ?$$

$$b = ?$$



$$\sin \alpha = \frac{a}{c}$$

$$\sin 75^\circ = \frac{a}{10}$$

$$0,97 = \frac{a}{10}$$

$$a = 0,97 \cdot 10$$

$$a = 9,7 \text{ cm}$$

1) $a^2 + b^2 = c^2$

$$b = ?$$

11) $\cos \alpha = \frac{b}{c}$

$$b = ?$$

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2.

$$a = 7 \text{ cm}$$

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

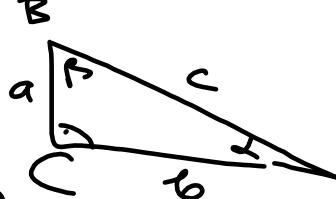
~~$$b = ?$$~~

~~$$\sin \alpha = ?$$~~

~~$$\cos \alpha = ?$$~~

~~$$\tan \beta = ?$$~~

~~$$\cot \beta = ?$$~~



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

$$49 + b^2 = 625$$

$$b^2 = 625 - 49$$

$$b^2 = 576$$

$$b = \sqrt{576}$$

$$b = 24 \text{ cm}$$

$$\sin \alpha = \frac{a}{c} = \frac{7}{25}$$

$$\cos \alpha = \frac{b}{c} = \frac{24}{25}$$

$$\tan \beta = \frac{b}{a} = \frac{24}{7}$$

$$\cot \beta = \frac{a}{b} = \frac{7}{24}$$

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3. a) $a = 3 \text{ cm}$
 $c = 6 \text{ cm}$

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

c) $b = 5 \text{ cm}$
 $c = 10 \text{ cm}$

2A DOMAĆI

$\alpha = ?$
 $\beta = ?$
 $\gamma = ?$

$\gamma = 90^\circ$

$\sin \alpha = \frac{a}{c}$
 $\sin \alpha = \frac{3}{6}$
 $\sin \alpha = \frac{1}{2} \Rightarrow \alpha = 30^\circ$

$a^2 + b^2 = c^2$
 $9 + b^2 = 36$
 $b^2 = 27$
 $b = \sqrt{27}$
 $b = \sqrt{9 \cdot 3} = \sqrt{9} \cdot \sqrt{3}$
 $b = 3\sqrt{3}$

$\alpha + \beta + \gamma = 180^\circ$
 $30^\circ + \beta + 90^\circ = 180^\circ$
 $\beta = 180^\circ - 90^\circ - 30^\circ$
 $\beta = 60^\circ$

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4. a)

$\alpha = 53^\circ$
 $c = 10$
 $\gamma = 90^\circ$

$\alpha + \beta + \gamma = 180^\circ$
 $53^\circ + \beta + 90^\circ = 180^\circ$
 $143^\circ + \beta = 180^\circ$
 $\beta = 180^\circ - 143^\circ$
 $\beta = 37^\circ$

b) 2A domaći

$\alpha = 40^\circ$
 $b = 6$

$\sin \alpha = \frac{a}{c}$
 $\sin 40^\circ = \frac{a}{10}$
 $0,80 = \frac{a}{10}$
 $a = 0,80 \cdot 10$
 $a = 8 \text{ cm}$

$a^2 + b^2 = c^2$
 $64 + b^2 = 100$
 $b^2 = 100 - 64$
 $b^2 = 36$
 $b = \sqrt{36}$
 $b = 6 \text{ cm}$

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a) $a = 4\sqrt{3}$, $b = 12$, $\gamma = 90$

b) $a = 9\sqrt{3}$, $\alpha = 30$ **DOMAĆI**

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

$$(4\sqrt{3})^2 + 12^2 = c^2$$

$$16 \cdot 3 + 144 = c^2$$

$$48 + 144 = c^2$$

$$c^2 = 192$$

$$c = \sqrt{192} = \sqrt{64 \cdot 3}$$

$$c = 8\sqrt{3}$$

$$\sin \alpha = \frac{a}{c}$$

$$\sin \alpha = \frac{4\sqrt{3}}{8\sqrt{3}}$$

$$\sin \alpha = \frac{1}{2} \quad (\alpha = 30^\circ)$$

$$\beta = 60^\circ$$

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TRIGONOMETR. IDENTITETI

Osnovni trig. id.:

1. $\sin^2 \alpha + \cos^2 \alpha = 1$

2. $\operatorname{tg} \alpha = \frac{\sin \alpha}{\cos \alpha}$

dokaz: $\left(\frac{a}{c}\right)^2 + \left(\frac{b}{c}\right)^2 = 1$

$$\frac{a^2}{c^2} + \frac{b^2}{c^2} = 1$$

$$\frac{a^2 + b^2}{c^2} = 1 \quad \frac{c^2}{c^2} = 1 \quad 1 = 1 \quad \checkmark$$

$$\frac{a}{b} = \frac{\frac{a}{c}}{\frac{b}{c}} \quad \frac{a}{b} = \frac{a \cdot c}{c \cdot b} \quad \frac{a}{b} = \frac{a \cdot c}{c \cdot b} \quad \frac{a}{b} = \frac{a \cdot c}{c \cdot b}$$

3. $\operatorname{ctg} \alpha = \frac{\cos \alpha}{\sin \alpha}$

4. $\operatorname{tg} \alpha \cdot \operatorname{ctg} \alpha = 1$

$$\frac{a}{b} \cdot \frac{b}{a} = 1$$

$$1 = 1 \quad \checkmark$$

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$$\textcircled{1.} \quad \sin \alpha = \frac{3}{5}$$

$$\cos \alpha = ?, \quad \operatorname{tg} \alpha, \quad \operatorname{ctg} \alpha = ?$$

$$\sin^2 \alpha + \cos^2 \alpha = 1$$

$$\left(\frac{3}{5}\right)^2 + \cos^2 \alpha = 1$$

$$\frac{9}{25} + \cos^2 \alpha = 1$$

$$\cos^2 \alpha = 1 - \frac{9}{25}$$

$$2 + 3 = 5$$

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