# Припрема за писмени

1. а) $3\cdot\left(-\frac{2}{3}\right)^2 - 3 : \left(-\frac{1}{2}\right)^2 + \left(\frac{2}{3}\right)^2 \cdot \frac{9}{2^2} =$

$\frac{3}{1}\cdot\frac{4}{9} - \frac{3}{1}:\frac{1}{4} + \frac{4}{9}\cdot\frac{9}{4} =$

$\frac{4}{3} - \frac{3}{1}\cdot\frac{4}{1} + 1 =$

$\frac{4}{3} - 12 + 1 =$

$\frac{4}{3} - \frac{11}{1} =$

$\frac{4}{3} - \frac{33}{3} =$

$-\frac{29}{3}$

б) $1\frac{7}{8}\cdot\sqrt{(-0{,}4)^2} - \left(-\frac{1}{5}\right)^2\cdot\sqrt{25^2} - 1\frac{1}{2}\cdot\sqrt{7\frac{1}{9}} =$

$\sqrt{(-0{,}4)^2} = |-0{,}4| = 0{,}4$

$\sqrt{25^2} = |25| = 25$

$\sqrt{a^2} = |a|$

$0{,}4 = \frac{4}{10} = \frac{2}{5}$

$\frac{15}{8}\cdot 0{,}4 - \frac{1}{25}\cdot\frac{25}{1} - \frac{3}{2}\cdot\sqrt{\frac{64}{9}} =$

$\frac{15}{8}\cdot\frac{2}{5} - 1 - \frac{3}{2}\cdot\frac{8}{3} =$

$\frac{3}{4} - 1 - 4 =$

$\frac{3}{4} - \frac{5}{1} =$

$\frac{3}{4} - \frac{20}{4} =$

$-\frac{17}{4}$

2. $\left(\sqrt{108} - \sqrt{75} + \sqrt{48}\right)\cdot\sqrt{12} =$

$\left(\sqrt{36\cdot 3} - \sqrt{25\cdot 3} + \sqrt{16\cdot 3}\right)\cdot\sqrt{4\cdot 3} =$

$\left(6\sqrt{3} - 5\sqrt{3} + 4\sqrt{3}\right)\cdot 2\sqrt{3} =$

$5\sqrt{3}\cdot 2\sqrt{3} =$

$5\cdot 2\cdot\sqrt{3}\cdot\sqrt{3} =$

$10 \quad 3$

$10\cdot 3 =$

$30$

$5\sqrt{3} : 2\sqrt{3} =$

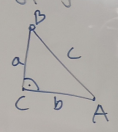
$\frac{5\sqrt{3}}{2\sqrt{3}} =$

$\frac{5}{2} =$

$2{,}5$

# Припрема за писмени

3. а) Хипотенуза правоуглог $\Delta$ је 15, а катета 12. Одредити $O$ и $P$ тог $\Delta$.




$c = 15$

$a = 12$

$O = ?\quad P = ?$

$b^2 = c^2 - a^2$

$b^2 = 15^2 - 12^2 = 225 - 144 = 81$

$b = \sqrt{81}$

$b = 9$

$O = a + b + c = 12 + 9 + 15 = 36$

$P = \frac{a \cdot b}{2} = \frac{12 \cdot 9}{2} = 54$

б) Да ли је $\Delta$ коме су странице 16, 30 и 34 правоугли?


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

$c = 34$

$b = 30$

$a = 16$

$34^2 = 16^2 + 30^2$ ?

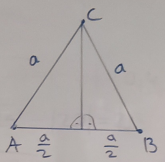
$1156 = 256 + 900$ ?

$1156 = 1156$ ✓

Троугао јесте правоугли.

4. $P = 9\sqrt{3}\ cm^2$

$a = ?\ h = ?\ r_0 = ?\ r_u = ?\ O = ?$




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

$\frac{a^2\sqrt{3}}{4} = 9\sqrt{3}$

$a^2\sqrt{3} = 4 \cdot 9\sqrt{3}$

$a^2\sqrt{3} = 36\sqrt{3}$

$a^2 = 36$

$a = \sqrt{36}$

$a = 6\ cm$

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

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

$h = 3\sqrt{3}\ cm$

$r_0 = \frac{a\sqrt{3}}{3}$

$r_0 = \frac{6\sqrt{3}}{3}$

$r_0 = 2\sqrt{3}\ cm$

$r_u = \frac{a\sqrt{3}}{6}$

$r_u = \frac{6\sqrt{3}}{6}$

$r_u = \sqrt{3}\ cm$

$O = 3 \cdot a$

$O = 3 \cdot 6\ cm$

$O = 18\ cm$