

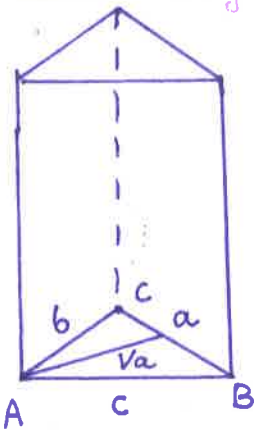
PRIMJER TESTA

grupa (A)

23/23

(5) 😊
Bravo!

15. zadatak (udžbenik, str. 114) - Osnovka uspravne prizme je trokut sa stranicama dužina 8, 9 i 11 cm. Visina prizme jednaka je najvećoj visini osnovke. Koliki je obujam prizme?



$$a = 8$$

$$b = 9$$

$$c = 11$$

$$V = ?$$

$$V = B \cdot h$$

$$B = \sqrt{s(s-a)(s-b)(s-c)} \quad ; \quad s = \frac{a+b+c}{2}$$

$$B = 6\sqrt{35} \quad (+1)$$

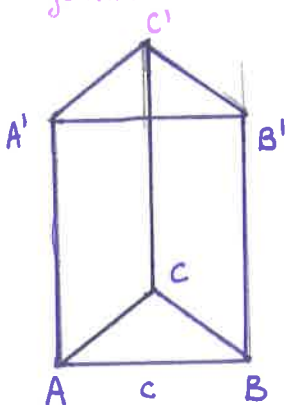
$$s = 14$$

$$B = \frac{a \cdot Va}{2} \Rightarrow Va = \frac{2B}{a} \Rightarrow Va = \frac{3\sqrt{35}}{2} = h$$

$$V = B \cdot h \Rightarrow V = 315 \quad (+1)$$

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20. zadatak (udžbenik, 114. str.) Osnovka prizme je pravokutni trokut s katetama dužina 6 i 8 cm. Pobočka nad hipotenuzom okomita je na ravninu osnovke i ima površinu 200 cm². Koliki je obujam prizme?



$$a = 6 \text{ cm}$$

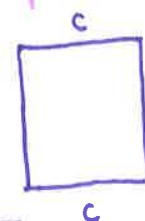
$$b = 8 \text{ cm}$$

$$P_p = 200 \text{ cm}^2$$

$$V = ?$$

$$c = \sqrt{a^2 + b^2}$$

$$c = 10 \quad (+1)$$



$$P_p = c \cdot h$$

$$h = \frac{P_p}{c}$$

$$h = 20$$

$$B = \sqrt{s(s-a)(s-b)(s-c)}$$

$$B = 24$$

$$s = \frac{a+b+c}{2}$$

$$s = 12$$

(+1)

$$V = B \cdot h$$

$$V = 480 \quad (+1)$$

$$96\pi \text{ cm}^2$$

$$10 \text{ cm}$$

volumen

$$P = r^2 \pi + r \pi s \quad (+1)$$

$$r^2 \pi + s \pi r - P = 0$$

$$r_1 = 6$$

$$r_2 = -16$$

$$h = \sqrt{s^2 - r^2} \quad (+1)$$

$$h = 8$$



$$V = \frac{1}{3} B \cdot h \quad (+1)$$

$$V = \frac{1}{3} r^2 \pi \cdot h$$

$$V = 96\pi \text{ cm}^3$$

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stošca

visine 2.5m

površina podnice 20 m^2

$$B = 20 \text{ m}^2$$

$$h = 2.5 \text{ m}$$

$$P = ?$$

$$P = r \pi s$$

$$P = 8.85 \text{ m}^2$$

(+1)



$$s^2 = h^2 + r^2 \quad (+1)$$

$$s \approx 3.54 \text{ m}$$



$$B = r^2 \pi / \pi$$

$$r = \sqrt{\frac{B}{\pi}}$$

$$r = 2.5 \text{ m}$$

(+1)

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14. zadatak (udžbenik str 134.)

Visina uspravnog valjka jednaka je 16 cm, a poluprijer osnovke 10 cm.

Dužini duljine 20 cm jedan je kraj na rubu donje, a drugi na rubu gornje osnovke. **KOLIKA JE NAIKRAĆA UDALJENOST TE DUŽINE OD OSI VALJKA?**

$$V = 16 \text{ cm}$$

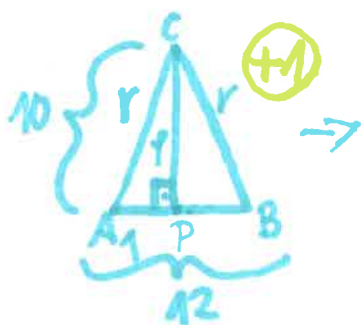
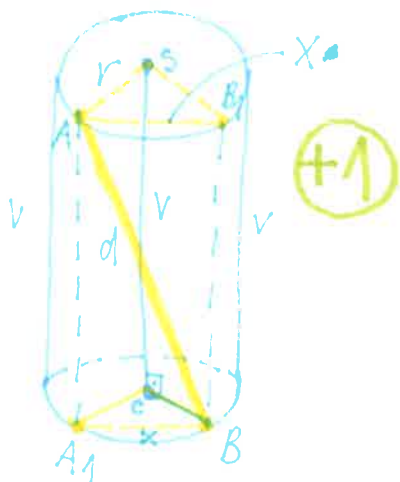
$$r = 10 \text{ cm}$$

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

$$x^2 = d^2 - V^2 \rightarrow \text{konstruiraj pitagoru za izračun } x$$

$$x^2 = 20^2 - 16^2$$

$$x = 12 \quad (+1)$$



$$|CA_1| = |CB| = r = 10$$

$$|A_1B| = 12$$

$$PB = 6 \rightarrow PB = \frac{1}{2}|A_1B| \rightarrow \text{Dužina PB je pola dužine } A_1B$$

$$|CP| = p$$

$$p^2 = 10^2 - 6^2$$

$$p^2 = 64 / \sqrt{\quad}$$

$$p = 8$$

$$(+1)$$

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ZADATAK 5 INTERNETA

Ako je oplošje valjka $16\sqrt{3} \text{ cm}^2$, a poluprijer osnovke jednak visini, **IZRAČUNAJ OBUJAM VALJKA.**

$$O = 2 \cdot r \cdot \pi \cdot (r + v)$$

$$r = v$$

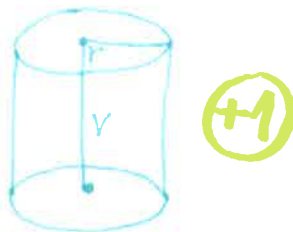
$$O = 2 \cdot r \cdot \pi \cdot 2r = 4 \cdot r^2 \cdot \pi$$

$$16\sqrt{3} = 4 \cdot r^2 \cdot \pi \quad \rightarrow \text{UVRSTIMO } r$$

$$r^2 = 4 / \pi$$

$$r = 2 \quad (+1)$$

$$V = r^2 \cdot \pi \cdot r = r^3 \cdot \pi = 2^3 \cdot \pi = 8\pi \text{ cm}^3 \quad (+1)$$



1. zadatak (Internet) Pravilna četverostrana piramida ima površinu baze 144 cm^2 , a duljina visine pobočke iznosi $15,5 \text{ cm}$.
Određite oplošje te piramide.

$$O = B + P \rightarrow P = ?$$

$$P = 4 \cdot \frac{a \cdot v}{2} \quad (+1)$$

$$B = 144 \text{ cm}^2$$

$$B = a^2$$

$$a = 12$$

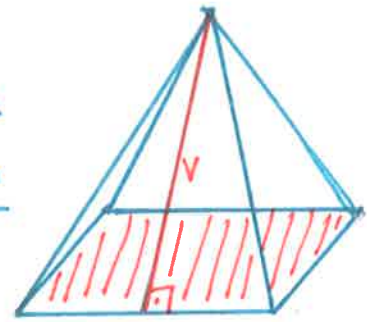
$$P = 4 \cdot \frac{12 \cdot 15,5}{2}$$

$$P = 372$$

$$B = 144 \text{ cm}^2$$

$$V = 15,5 \text{ cm}$$

$$O = ?$$



$$O = 144 + 372$$

$$O = 516$$

(+1)

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2. zadatak (Internet) U pravilnoj četverostranoj piramidi zadan je osnovni brid dug 10 cm i visina piramide koja iznosi 12 cm . Koliki je volumen ove piramide? Koliko iznosi oplošje?

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

$$h = 12 \text{ cm}$$

$$V = ?$$

$$O = ?$$

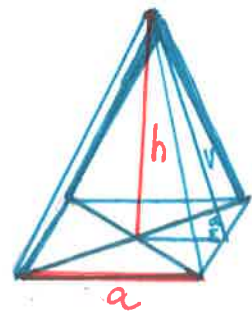
$$V = \frac{1}{3} B \cdot h$$

$$B = a^2$$

$$B = 100 \text{ cm}^2$$

$$V = 400 \text{ cm}^3$$

(+1)



$$O = B + P$$

$$B = 100 \text{ cm}^2$$

$$P = 4 \cdot \frac{a \cdot v}{2}$$

$$P = 4 \cdot \frac{10 \cdot 13}{2}$$

$$P = 260 \text{ cm}^2$$

$$O = 100 + 260 = 360$$

(+1)



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

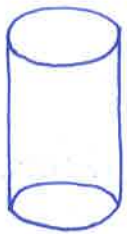
$$v = 13 \text{ cm}$$

(+1)

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Ispit znanja - Matematika
Prizme, piramide, valjak i stožac

1. Odredi obujam uspravnog valjka ako površina baze iznosi $200\pi \text{ cm}^2$, a oplošje $600\pi \text{ cm}^2$. Poluprijer baze iznosi 26 cm . [4]



$$B = 200\pi \text{ cm}^2$$

$$O = 600\pi \text{ cm}^2$$

$$r = 26 \text{ cm}$$

$$V = ?$$

$$V = B \cdot h$$

$$O = 2B + P$$

$$P = O - 2B = 200\pi \text{ cm}^2 \quad (+1)$$

$$P = 2r h \pi / 2r \pi$$

$$h = \frac{P}{2r \pi} = 3,846 \text{ cm} \quad (+1)$$

(+1)

$$V = 769,23\pi \text{ cm}^3 \quad (+1)$$

2. Oplošje stošca iznosi $384\pi \text{ cm}^2$, a duljina njegove izvodnice 20 cm . Koliki je obujam stošca?

$$O = 384\pi \text{ cm}^2$$

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

$$V = ?$$

$$V = \frac{1}{3} B \cdot h = \frac{\pi r^2 h}{3} \quad (+1)$$

$$O = B + P = \pi r^2 + \pi r s$$

$$V = \frac{12^2 \pi \cdot 16}{3}$$

$$V = 768\pi \quad (+1)$$

$$384\pi = \pi r(r+s)$$

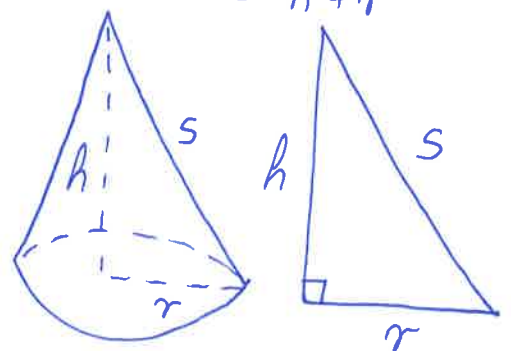
$$384 = r(r+s)$$

$$384 = r^2 + sr$$

$$r^2 + sr - 384 = 0 \quad (+1)$$

$$r = 12 \quad (+1)$$

$$s^2 = h^2 + r^2$$



$$h = \sqrt{s^2 - r^2}$$

$$h = \sqrt{400 - 144}$$

$$h = \sqrt{256}$$

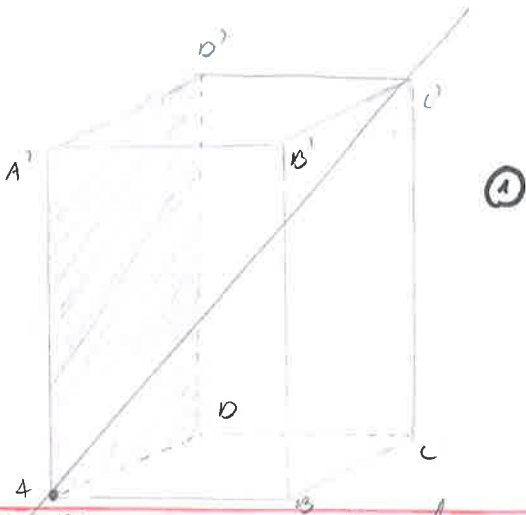
$$h = 16 \quad (+1)$$

5. PISANA PROVJERA

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1. Označi ravninu $A'D'D$ i pravac AC . Sijeku li se, ako da, gdje se sijeku?

Ravnina i pravac se sijeku u točki A .



2. Površine polslična usporedna tetraedra prizme iznose: 425 cm^2 , 700 cm^2 i 975 cm^2 , a rjezinica je visina 25 cm . Izračunajte površine i obujam prizme.

$$P_1 = 425 \text{ cm}^2$$

$$P_2 = 700 \text{ cm}^2$$

$$P_3 = 975 \text{ cm}^2$$

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

$$P = P_1 + P_2 + P_3$$

$$P = 2100$$

$$S = \frac{a+b+c}{2}$$

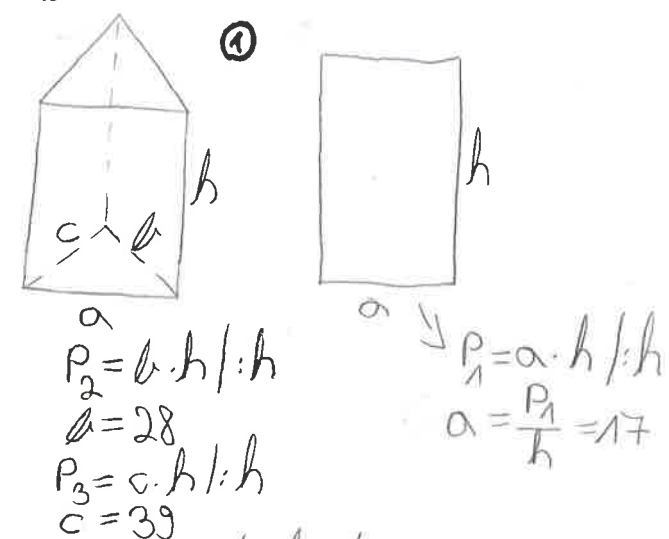
$$S = 42$$

$$B = \sqrt{s(s-a)(s-b)(s-c)}$$

$$= 210$$

$$V = B \cdot h$$

$$= 5250$$



$$O, V = ?$$

$$O = 2B + P$$

$$O = 2520$$

3. Osnovna plosnina jednakostraničari je tekuć sa stranicom duljine 12 cm . Duljina svakog bojnog brida je 13 cm . Koliki je približni kut bojnog brida prema ravnini osnovice? Koliki su približni kutovi bojnih strana prema osnovici?