VALJ – vaje za utrjevanje

1. $O = 28{,}26\,cm^2$, $pl = 169{,}56\,cm^2$, $P = ?$

$P = 2 \cdot O + pl$

$P = 2 \cdot 28{,}26 + 169{,}56$

$P = 56{,}52 + 169{,}56$

$\underline{\underline{P = 226{,}08\,cm^2}}$

2. $v = 12\,cm$, $O = 50{,}24\,cm^2$, $V = ?$

$V = O \cdot v$

$V = 50{,}24 \cdot 12$

$\underline{\underline{V = 602{,}88\,cm^3}}$

3. $v = 9\,cm$, $O = 16\pi\,cm^2$, $P = ?$, $V = ?$

$O = \pi r^2$

$\pi r^2 = 16\pi \mid :\pi$

$r = \sqrt{16}$

$r = 4\,cm$

$P = 2\pi r(r+v)$

$P = 2\pi \cdot 4(4+9)$

$P = 8\pi \cdot 13$

$P = 104\pi\,cm^2$

$\underline{\underline{P \doteq 326{,}56\,cm^2}}$

$V = \pi r^2 v$

$V = \pi \cdot 4^2 \cdot 9$

$V = 16\pi \cdot 9$

$V = 144\pi\,cm^3$

$\underline{\underline{V \doteq 452{,}16\,cm^3}}$

4. $pl = 14\pi\,dm^2$, $v = 16\,cm$, $P = ?$, $V = ?$

$pl = 2\pi rv$

$2\pi rv = 14\pi \mid :2\pi$

$rv = 7$

$1{,}6r = 7 \mid :1{,}6$

$r = 4{,}375\,dm$

$r = 43{,}75\,cm$

$P = 2\pi r(r+v)$

$P = 2 \cdot 3{,}14 \cdot 43{,}75 \cdot (43{,}75 + 16)$

$P = 274{,}75 \cdot 59{,}75$

$\underline{\underline{P \doteq 16416{,}3\,cm^2}}$

$V = \pi r^2 v$

$V = 3{,}14 \cdot 43{,}75^2 \cdot 16$

$\underline{\underline{V \doteq 961625\,cm^3}}$

5. $d = 0{,}9\,m = 9\,dm \Rightarrow r = 4{,}5\,dm$, $v = 50\,cm = 5\,dm$, $V = ?$

$V = \pi r^2 \cdot v$

$V = 3{,}14 \cdot 4{,}5^2 \cdot 5$

$V \doteq 317{,}925\,l \doteq \underline{318\,l}$

V korito lahko nasujemo približno 317,9 l zemlje.

6. $v = 1{,}5\,dm$, $V = 4{,}71\,l = 4{,}71\,dm^3$, $P = ?$

$\pi r^2 \cdot v = V$

$3{,}14 \cdot r^2 \cdot 1{,}5 = 4{,}71$

$4{,}71 \cdot r^2 = 4{,}71 \mid :4{,}71$

$r = \sqrt{1}$

$r = 1\,dm$

$P = 2\pi r(r+v)$

$P = 2 \cdot 3{,}14 \cdot 1(1+1{,}5)$

$P = 6{,}28 \cdot 2{,}5$

$\underline{\underline{P \doteq 15{,}7\,dm^2}} = 5\pi\,dm^2$

7. $p_{pos} = 40\,dm^2$, $v = 2\,m = 20\,dm$, 3 stebri, 1 l barve za $0{,}5\,m^2$

$d \cdot v = p_{pos}$

$20d = 40 \mid :20$

$d = 2\,dm$

$\Rightarrow r = 1\,dm$

$P = 2\pi r(r+v)$

$P = 2\pi \cdot 1(1+20)$

$P = 42\pi\,dm^2$

$P \doteq 131{,}88\,dm^2$

$pl = 2\pi rv$

$pl = 2\pi \cdot 1 \cdot 20$

$pl = 40\pi\,dm^2$

$pl \doteq 125{,}6\,dm^2$

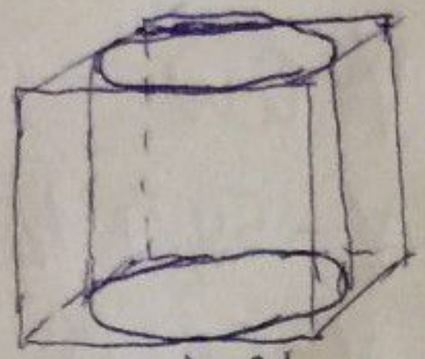
3 stebri: $125{,}6 \cdot 3 = 376{,}8\,dm^2$

$376{,}8\,dm^2 : 50\,dm^2 = 7{,}536$

$\doteq \underline{7{,}5\,l}$

Za pobarvanje vseh 3 stebrov potrebujejo približno 7,5 l barve.

8.



$a = v = 8dm$

$a = d = 8dm \Rightarrow r = 4dm$

$V_k = a^3$

$V_k = 8^3$

$V_k = 512dm^3$

$V_v = \pi r^2 v$

$V_v = \pi \cdot 4^2 \cdot 8$

$V_v = 128\pi dm^3$

$V_v \doteq 401,92dm^3$

$V_o = V_k - V_v$

$V_o = 512 - 401,92$

$V_o = 110,08dm^3$

$\frac{V_o}{V_k} \cdot 100\% = \frac{110,08}{512} \cdot 100\% = 0,215 \cdot 100\% = 21,5\%$

Odpadka je 21,5%.

9.

$v = 2m$

$d = 50cm \Rightarrow r = 25cm$

$V = ?$

$V = \pi r^2 v$

$V = \pi \cdot 0,25^2 \cdot 2$

$V = 0,125\pi m^3$

$V \doteq 0,3925m^3 \doteq 0,4m^3$

V 2m dolgem hlodo je približno $0,4m^3$ lesa.

10.

$P = 448\pi cm^2$

$r : v = 2 : 5$

$V = ?$

$5r = 2v \mid :2$

$2,5r = v$

$\Rightarrow v = 25 \cdot 8$

$v = 20cm$

$P = 2\pi r(r + v)$ $\quad v = 3,5r$

$448\pi = 2\pi r(r + 2,5r)$

$448\pi = 7\pi r^2 \mid :7\pi$

$64 = r^2$

$r = \sqrt{64}$

$r = 8cm$

$V = \pi r^2 v$

$V = \pi \cdot 8^2 \cdot 20$

$V = 1280\pi cm^3$

$V \doteq 4019,2cm^3$

Prostornina valja znaša približno $4019,2cm^3$.