(8.) Pallon säde $r = \frac{11,6\,cm}{2} = 5,8\,cm$

$V = \frac{4}{3}\pi r^3 = \frac{4}{3}\pi (5,8\,cm)^3 \approx 817,283\,cm^3$

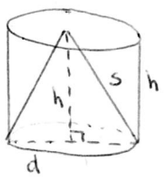
Lasin tiheys

$\rho = 2\,380\,kg/m^3 = \frac{2\,380\,kg}{1\,000\,000\,cm^3} = 0,002\,380\,kg/cm^3$

Pallon paino

$m = \rho \cdot V = 0,002\,380\,kg/cm^3 \cdot 817,283\,cm^3 \approx \underline{1,95\,kg}$

(9.)



$d = 6 \qquad r = 3$

$h = 4$

Ympyräkartion sivujanan pituus

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

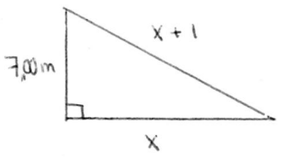
$s^2 = 4^2 + 3^2$

$s = \sqrt{25} = 5$

Pinta-alojen suhde

$\frac{A_K}{A_L} = \frac{\pi r s}{2\pi r h} = \frac{\pi \cdot 3 \cdot 5}{2\pi \cdot 3 \cdot 4} = \frac{15\pi}{24\pi} = \underline{\frac{5}{8}}$

(10.)



$7,00^2 + x^2 = (x+1)^2$

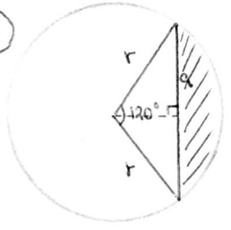
$49 + x^2 = x^2 + 2x + 1$

$2x = 48 \qquad 1:2$

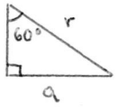
$x = 24$

Hypotenuusa $x + 1 = 24,0m + 1m = \underline{25,0\,m}$

(11.)



$r = 3,0\,cm$



$\sin 60° = \frac{a}{r} = \frac{a}{3,0\,cm}$

$a = 3,0 \cdot \sin 60° = \frac{3,0 \cdot \sqrt{3}}{2}$

Kaaren pituus

$b = \frac{120°}{360°} \cdot 2\pi \cdot 3,0 = 2\pi$

Segmentin piiri: $2 \cdot \frac{3 \cdot \sqrt{3}}{2} + 2\pi = 3\sqrt{3} + 2\pi \approx \underline{11,5\,(cm)}$

Segmentin ala = sektorin ala − keskuskolmion ala

$A = \frac{120°}{360°} \cdot \pi \cdot 3,0^2 - \frac{1}{2} \cdot 3,0 \cdot 3,0 \cdot \sin 120°$ $\qquad A_k = \frac{1}{2} ab \sin\gamma$

$= 3\pi - 4,5 \cdot \frac{\sqrt{3}}{2} \approx 5,5\,(cm^2)$