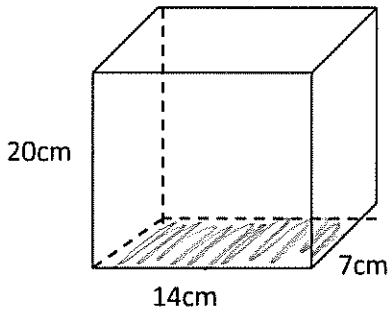
Review 12·1-12·5

Name: Answer Key

1. Find the lateral area, surface area and volume of the prism.



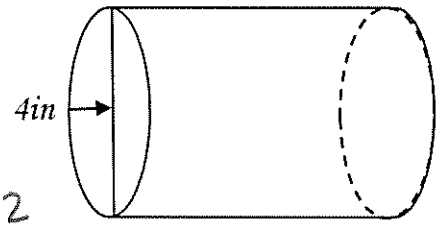
B = 98
h = 20
P = 42

L.A. = $p \cdot h = 42 \cdot 20$ = $840 cm^2$

S.A. = $L + 2B = 840 + 2(98)$ = $1,036 cm^2$

V = $B \cdot h = 98(20)$ = $1,960 cm^3$

2. Find the lateral area, surface area and volume of the cylinder.
LEAVE IN TERMS OF PI.



r = 2
h = 6in

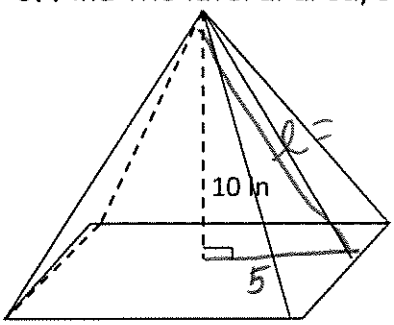
$B = \pi 2^2 = 4\pi$

L.A. = $2\pi r h = 2\pi(2)(6)$ = $24\pi\ in^2$

S.A. = $L + 2B = 24\pi + 2(4\pi)$ = $32\pi\ in^2$

V = $B \cdot h = 4\pi(6)$ = $24\pi\ in^3$

3. Find the lateral area, surface area and volume of the regular pyramid.



$5^2 + 10^2 = \ell^2$
$25 + 100 = \ell^2$

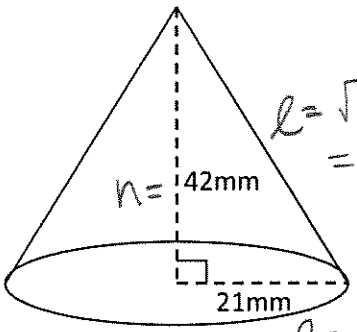
P = 40
B = 100
h = 10
$\ell = 5\sqrt{5}$

L.A. = $\frac{1}{2} p \cdot \ell = \frac{1}{2}(40)(5\sqrt{5})$ = $100\sqrt{5}\ in^2$

S.A. = $L + 1B = 100\sqrt{5} + 100$ = $100\sqrt{5} + 100\ in^2$

V = $\frac{1}{3} B \cdot h = \frac{1}{3}(100)(10)$ = $\frac{1000}{3}\ in^3$

4. Find the lateral area, surface area and volume of the cone. LEAVE IN TERMS OF PI.



$\ell = \sqrt{2205} = 21\sqrt{5}$

$B = \pi r^2 = \pi 21^2 = 441\pi$

L.A. = $\pi r \ell = \pi 21 \cdot 21\sqrt{5}$ = $441\sqrt{5}\pi\ mm^2$

S.A. = $L + 1B = 441\sqrt{5}\pi + 441\pi$ = $441\sqrt{5}\pi + 441\pi\ mm^2$

V = $\frac{1}{3} B \cdot h = \frac{1}{3}(441\pi)(42)$ = $6174\pi\ mm^3$