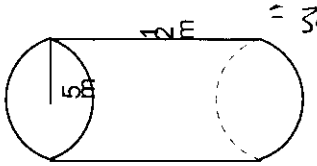
Chapter 12 Practice Test

Name _____

Show your work for each problem. Feel free to attach an extra sheet with work.

1. Volume = $\pi r^2 \cdot h = 25\pi \cdot 12 = 300\pi$



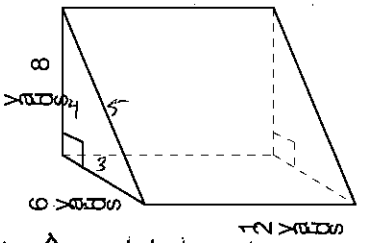
Area ⊙ = $\pi r^2 = \pi 5^2 = 25\pi$

Lateral S.A. = $2\pi r \cdot h = 120\pi$

T.S.A. = 170π m^2

Volume = 300π m^3

2. Volume = $\frac{1}{2} b \cdot h \cdot 12 = 24 \cdot 12$



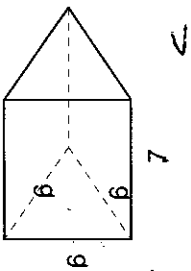
Area △ = $\frac{1}{2} b \cdot h = \frac{1}{2} \cdot 48 = 24$

L.S.A = $12 \cdot 6 + 12 \cdot 8 + 10 \cdot 12 = 288$

T.S.A. = 336 yd^2

Volume = 288 yd^3

3.



$V = 9\sqrt{3} \cdot 7$

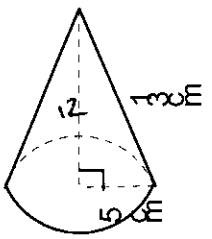
Area △ = $\frac{1}{2} b \cdot h = \frac{1}{2} \cdot 6 \cdot 3\sqrt{3} = 9\sqrt{3}$

L.S.A. = perimeter · height = $18 \cdot 7$

T.S.A. = $18\sqrt{3} + 126$

Volume = $63\sqrt{3}$

4.



Area ⊙ = $\pi r^2 = 25\pi$

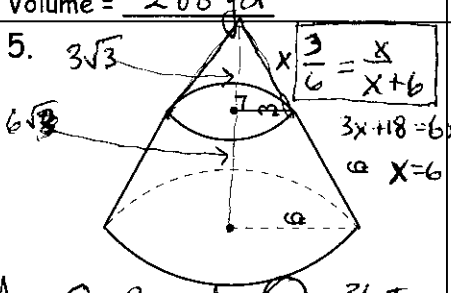
L.S.A. = $\frac{1}{2} 2\pi r \cdot 13 = 65\pi$

T.S.A. = 90π cm^2

Volume = 100π cm^3

$V = \frac{1}{3} B \cdot h = \frac{1}{3}(25\pi)12$

5.



$\frac{3}{6} = \frac{x}{x+6}$

$3x + 18 = 6x$

$x = 6$

Area ⊙ = 9π Area ⊙ = 36π

L.S.A Large cone = $\frac{1}{2}(2\pi 6)12 = 72\pi$

L.S.A small cone = $\frac{1}{2}(2\pi 3)6 = 18\pi$

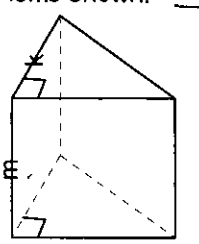
T.S.A. = $72\pi - 18\pi + 9\pi + 36\pi$

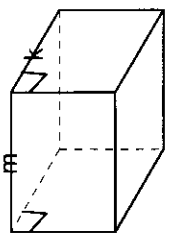
99π

Volume = 63π

$\frac{1}{3}(36\pi)6\sqrt{3} - \frac{1}{3}(9\pi)(3\sqrt{3})$

6. Find the ratio of the two right prisms shown. Volume



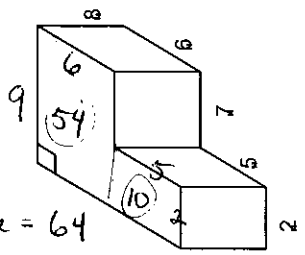


$\frac{1}{2}(2k \cdot k)m = k^2 m$

$k \cdot m \cdot k = k^2 m$

ratio = $1:1$

7. Find the volume of this figure.



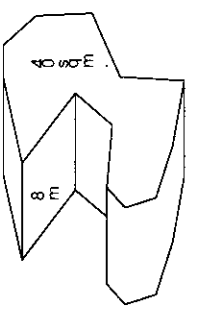
Area side = 64

depth = 8

$V = 64 \cdot 8 =$

Volume = 512

8. A modern art sculpture has an irregular base with area 40 sq. m. and a height of 8 m (right cross sections are congruent.) What is the volume of the sculpture?

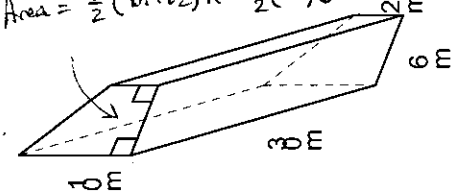


$V = 40 m^2 \cdot 8 m = 320 m^3$

Volume = $320 m^3$

9. A trapezoidal dam is to be built across a river. Find the volume of cement needed to form it. Measurements are made in meters

Area = $\frac{1}{2}(b_1 + b_2)h = \frac{1}{2}(12)6 = 36$



Volume = $36 \cdot 30 =$

Volume = $1080 m^3$