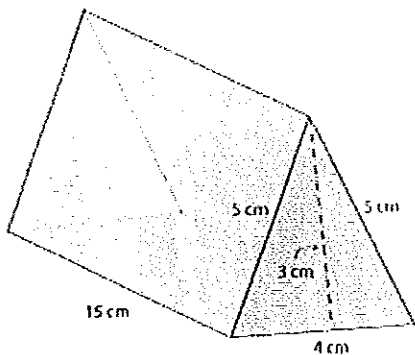


Name:

Boot Camp: Solids Take Home and Check Tier A

1) Find the surface area and volume of the following figure.

Identify the solid:



1) Triangular prism

SA =

$$\text{Bases} = \frac{bh}{2} = \frac{(4)(3)}{2} = \frac{12}{2} = 6$$

$$2 \text{ of them} = 12$$

Sides =

$$\rightarrow 15 \times 5 = 75$$

$$\rightarrow 4 \times 15 = 60$$

$$\rightarrow 15 \times 5 = 75$$

$$\text{Add} = \boxed{222 \text{ cm}^2}$$

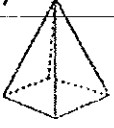
$$V = Bh$$

↙
area of
base

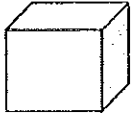
$$6(15) = 90 \text{ cm}^3$$

2) Identify each solid below.

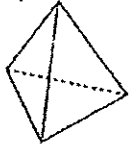
a)



b)



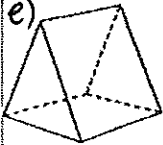
c)



d)



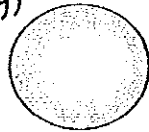
e)



f)



g)



h)



i)



2)

a) square pyramid

b) cube

c) triangular pyramid

d) Rect prism

e) triangular prism

f) pentagonal pyramid

g) sphere

h) cone

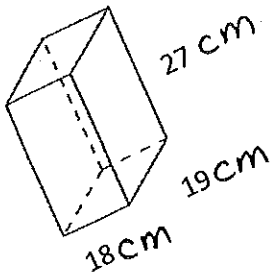
i) cylinder

3) How many faces, edges, and vertices does a rectangular prism have?

3) faces = 6
edges = 12
vertices = 8

4) Find the surface area and volume of the following figure.

Identify the solid:



4) Rectangular prism

SA

$$2(18 \times 19) + 2(18 \times 27) + 2(19 \times 27)$$

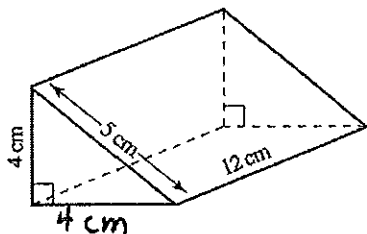
$$2(342) + 2(486) + 2(513)$$

$$684 + 972 + 1026 = \boxed{2682 \text{ cm}^2}$$

$$V = (18)(19)(27) = \boxed{9234 \text{ cm}^3}$$

5) Find the surface area and volume of the following figure.

Identify the solid:



5) triangular prism

SA

$$\text{Bases} = \Delta = \frac{(4)(4)}{2} = \frac{16}{2} = 8$$

$$2 \text{ of them} = 16$$

Sides

$$\rightarrow 5 \times 12 = 60$$

$$\rightarrow 12 \times 4 = 48$$

$$\rightarrow 4 \times 12 = 48$$

$$\text{Add} = \boxed{172 \text{ cm}^2}$$

$$V = Bh$$

$$(8)(12) = \boxed{96 \text{ cm}^3}$$

6) Michelle put her sister's birthday present in a box with a length of 13 mm, a width of 4mm, and a height of 8mm. How much square millimeters of wrapping paper will Michelle need to completely cover the box.

$$\begin{aligned} &6) \\ &2(13 \times 4) + 2(4 \times 8) + 2(13 \times 8) \\ &2(52) + 2(32) + 2(104) \\ &104 + 64 + 208 \\ &\boxed{376 \text{ mm}^2} \end{aligned}$$

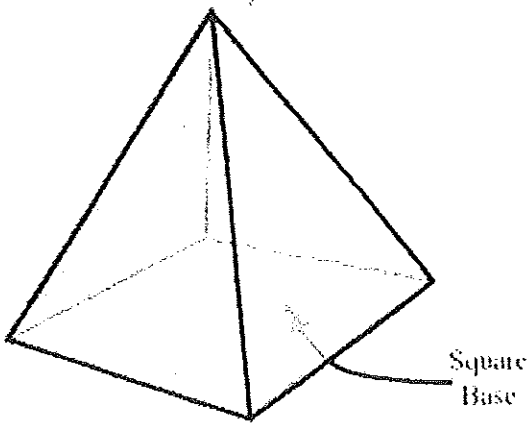
7) A swimming pool is 8 m long, 6 m wide, and 1.5 meters deep. The water-resistant paint needed for the pool costs \$6 per square meter.

a) How much will it cost to paint the interior surfaces of the pool?

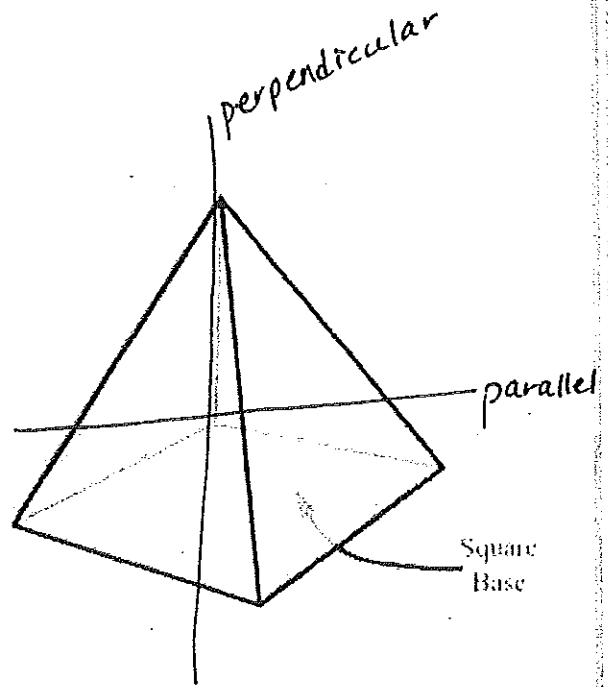
$$\begin{aligned} &7) \\ &\swarrow \text{only one} \rightarrow \text{no top} \\ &2(6 \times 1.5) + (8 \times 6) + 2(1.5 \times 8) \\ &2(9) + 48 + 2(12) \\ &18 + 48 + 24 \\ &90 \text{ m}^2 \\ &90 \times 6 = \boxed{\$540} \end{aligned}$$

8) Draw a cross section of this pyramid when it is cut by the planes described below. Then tell what shape is produced.

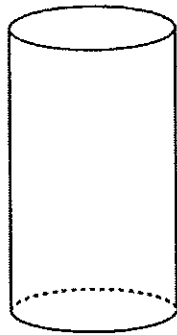
- a) Perpendicular to its base
- b) Parallel to its base



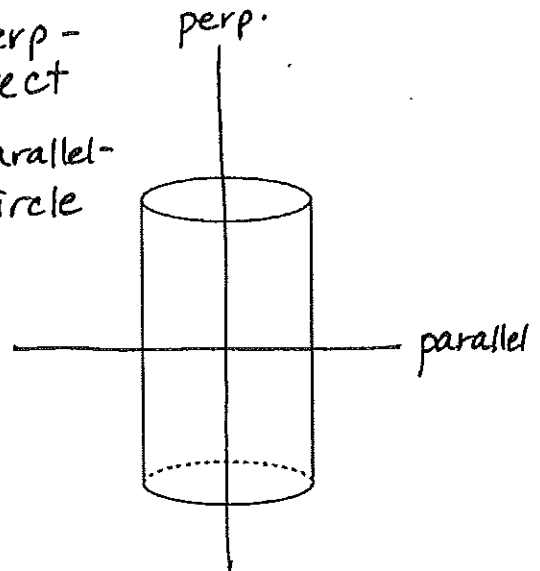
- 8) a) Triangle
b) Square



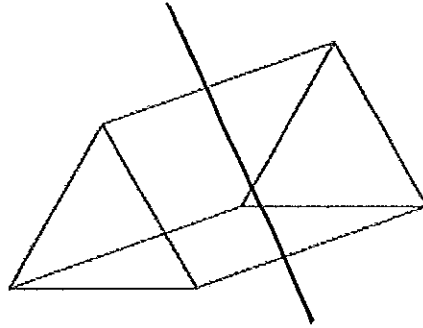
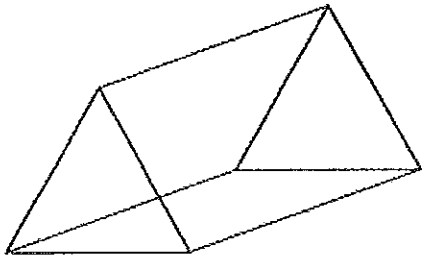
9) Draw a cross section of this cylinder when it is cut perpendicular and parallel to the base. What shapes are produced?



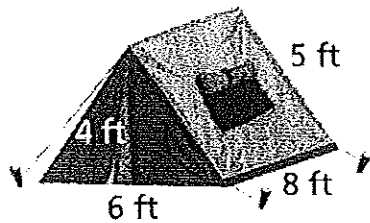
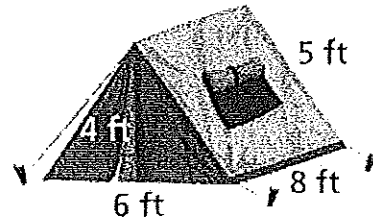
- a) perp - rect
- b) parallel - circle



10) Draw a cross section of this prism when it is cut parallel to the base.



11) The tent shown has fabric covering all four sides and the floor. What is the minimum amount of fabric needed to construct the tent?



$$\begin{aligned}
 SA &= \Delta = (4 \times 6) \div 2 = 12 \text{ ft}^2 \\
 \Delta &= (4 \times 6) \div 2 = 12 \text{ ft}^2 \\
 \square &= 8 \times 5 = 40 \text{ ft}^2 \\
 \square &= 8 \times 5 = 40 \text{ ft}^2 \\
 \square &= 6 \times 8 = 48 \text{ ft}^2
 \end{aligned}$$

$$\boxed{152 \text{ ft}^2}$$