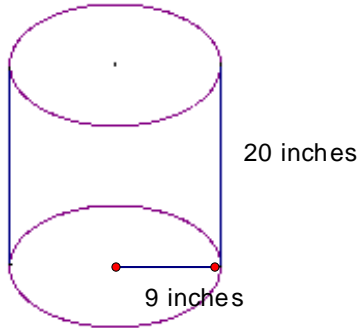


Math 116  
Test 2 Review

- 1) Find the volume.



$$V = \pi r^2 h = \pi(9)^2(20) = (81)(20)\pi = 1620\pi = 5089.4 \text{ cubic inches}$$

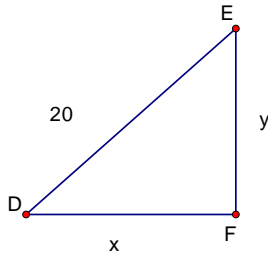
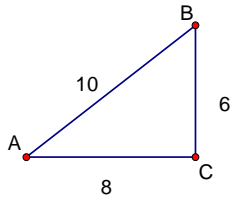
- 2) Find the volume of a truncated pyramid with a height of 10 cubits and bases that are 15 cubits by 15 cubits and 12 cubits by 12 cubits.

$$V = \frac{10}{3}(15^2 + (15)(12) + 12^2) = \frac{10}{3}(225 + 180 + 144) = \frac{10}{3}(549) = 1830 \text{ cubic cubits}$$

- 3) Find the area of a circle with a radius of 20 palms using the Egyptian value of Pi.

$$A = \pi r^2 = \frac{256}{81}(20)^2 = \frac{256}{81}(400) = 1264.2 \text{ square palms}$$

4) Given the two triangles are similar find the values of x and y.



$$\frac{x}{8} = \frac{20}{10}$$

$$10x = 20(8)$$

$$10x = 160$$

$$\frac{10x}{10} = \frac{160}{10}$$

$$x = 16$$

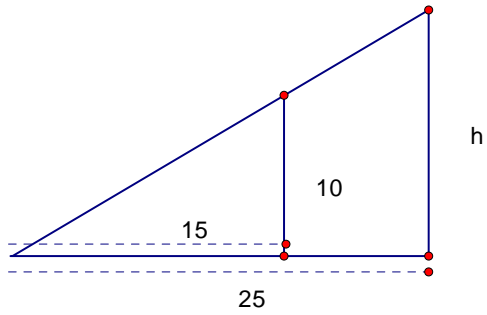
$$\frac{y}{6} = \frac{20}{10}$$

$$10y = 120$$

$$\frac{10y}{10} = \frac{120}{10}$$

$$y = 12$$

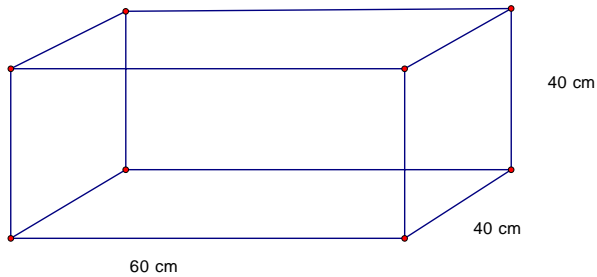
5) Find h



$$\frac{h}{25} = \frac{10}{15}$$
$$15h = (25)(10)$$
$$15h = 250$$
$$\frac{15h}{15} = \frac{250}{15}$$
$$h = 16.7$$

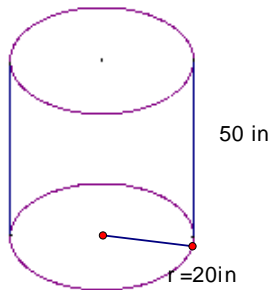
**Math 116**  
**Test 2 Review**

1) A rectangular aquarium is 60 centimeters by 40 centimeters by 40 centimeters. What is the volume of the aquarium?



$$V = (60 \text{ cm})(40 \text{ cm})(40 \text{ cm}) = 96000 \text{ cm}^3$$

2) A cylinder shaped hot water tank has a radius of 20 inches and a height of 50 inches. How much water can the hot water tank hold?



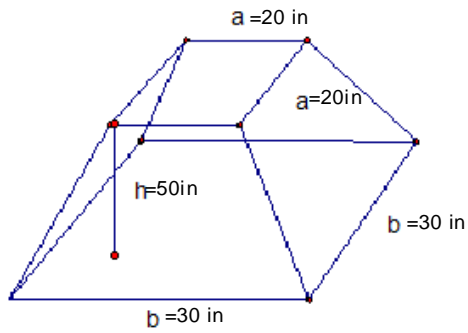
$$V = \pi r^2 h = 3.14(20 \text{ cm})^2 (50 \text{ cm}) = 62,800 \text{ in}^3$$

3) Find the volume of a regular pyramid with a height of 40 cubits and a base that is 30 cubits by 30 cubits.

$$V = \frac{1}{3}(30)^2 (40) = \frac{1}{3}(900)(40) = (300)(40) = 12000 \text{ cubic cubits}$$

4) Find the volume of a truncated pyramid with a height of 50 cubits and bases with dimensions of 30 cubits by 30 cubits and 20 cubits by 20 cubits.

$$V = \frac{50}{3}(20^2 + (20)(30) + 30^2) = \frac{50}{3}(400 + 600 + 900) = \frac{50}{3}(1900) = 31167 \text{ cubic cubits}$$



5) Compare the results from problems 3 and 4

Answers will vary

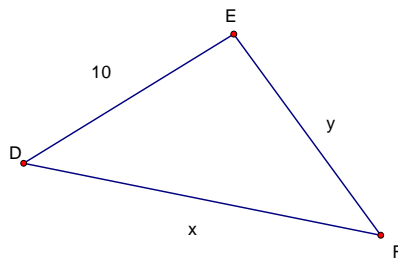
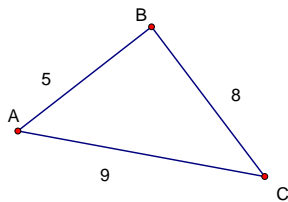
6) A rectangular shaped Egyptian lot is 300 cubits by 200 cubits. Find the area of the lot in square cubits and Setats.

$$A = (300)(200) = 60000 \text{ square cubits} = 6 \text{ setats}$$

7) Find the area of a circle with a radius of 12 palms using the Egyptian approximation for Pi. ( $\pi = \frac{256}{81}$ )

$$A = \pi r^2 = \frac{256}{81}(12)^2 = 455.1 \text{ square palms}$$

8) Given  $\triangle ABC \sim \triangle DEF$ , find x and y.



$$\frac{5}{10} = \frac{9}{x}$$

$$5x = 9(10)$$

$$5x = 90$$

$$x = 18$$

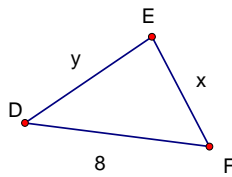
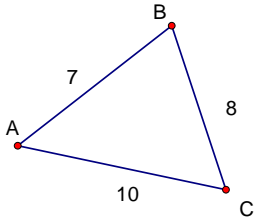
$$\frac{y}{8} = \frac{10}{5}$$

$$5y = 8(10)$$

$$5y = 80$$

$$y = 16$$

9) Given  $\triangle ABC \sim \triangle DEF$ , find  $x$  and  $y$ .



$$\frac{y}{7} = \frac{8}{10}$$

$$10y = 8(7)$$

$$10y = 56$$

$$y = 5.6$$

$$\frac{x}{8} = \frac{8}{10}$$

$$10x = 8(8)$$

$$10x = 64$$

$$x = 6.4$$

10)

Page 300 #28 Mostly Atmospheric Perspective

Page 299 #21

$$\frac{12.2}{24.5} = \frac{b}{4.5}$$

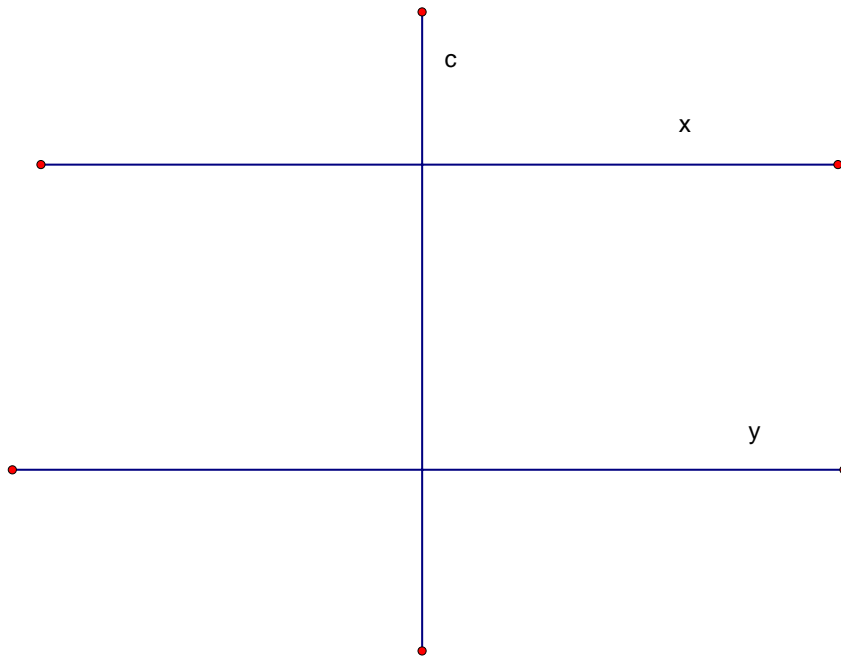
$$24.5b = 12.2(4.5)$$

$$24.5b = 54.9$$

$$b = 2.24$$

$$c = 20$$

11) Draw line  $x$  and line  $y$ , where  $c$  is perpendicular to both  $x$  and  $y$ .



12) Draw  $\overline{AB} \perp \overline{AC}$  and  $y \parallel \overline{AB}$

