Chapter 11 Sample Test

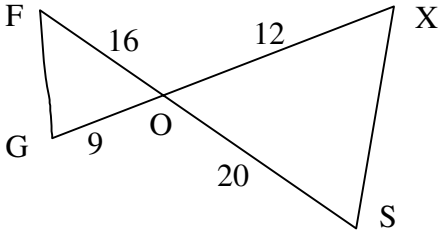
Show any necessary work. ***Give all answers either exactly or rounded to .01 .***

Solve each proportion by using the Cross-Product Property and algebra:

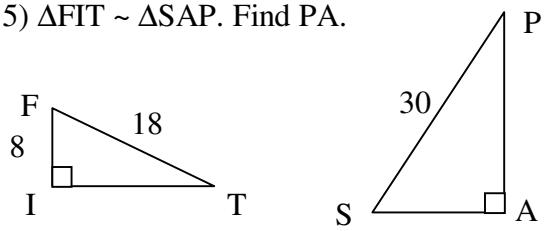
1) $\frac{3}{8}=\frac{4}{x}$ 2) $\frac{1-x}{5}=\frac{3}{4}$

3) Quad. HELP ~ Quad SAND. HE = 4, EL = 5, LP = 7, PH = 6 and SA = 10. Find the perimeter of SAND.

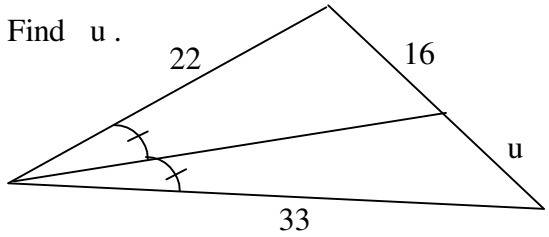
4) Is $\Delta FOG \sim \Delta SOX$. Why or why not?



5) $\Delta FIT \sim \Delta SAP$. Find PA.

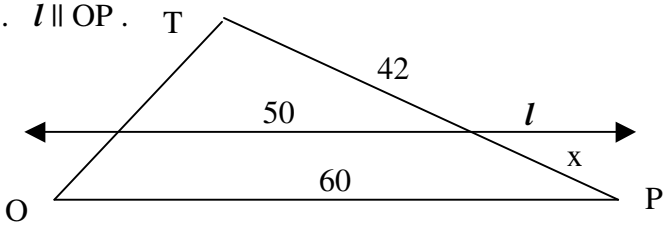


6) Find u .



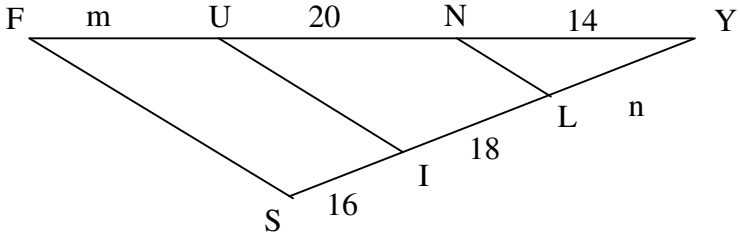
7) The ratio of the areas of two circles is 25:49. If the radius of the smaller circle is 12, what is the radius of the larger?

8) Find x . $l \parallel \overline{OP}$.



9) Rose, who is 5‘ tall, wishes to find the height of an oak tree out in front of her home. She walks along the shadow of the tree until her head is in a position where the end of her shadow exactly overlaps the end of the treetop’s shadow. She is now 24’ from the foot of the tree and 16’ from the end of the shadows. How tall is the oak tree? Express your answer in feet.

10) $\overline{FS} \parallel \overline{UI} \parallel \overline{NL}$. Find m and n .



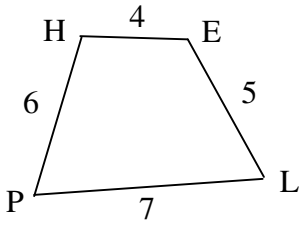
11) Two similar right cylinders have base radii of 3cm and 4cm. If the volume of the larger cylinder is 128π cm^3, what is the volume of the smaller cylinder?

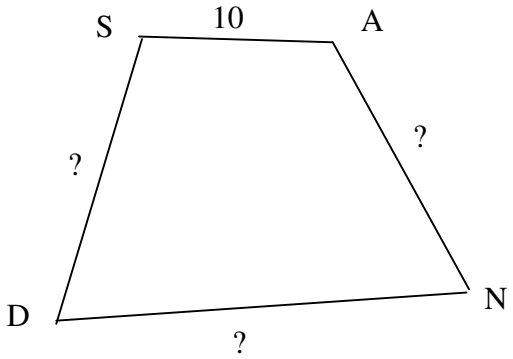
ANSWERS:

1) $3x = 32$
$x = 32/3$ or approximately 10.67

2) $4 - 4x = 15$
$-4x = 11$
$x = -11/4$

3) Draw a picture to help you visualize the relationships…..





Now find each of the sides AN, DN & SD using proportions:

4/10 = 5/AN and 4(AN) = 50, so AN = 50/4 or 12.5

Similarly, DN = 70/4 or 17.5 and DS = 15 .
The perimeter of SAND is 10 + 12.5 + 17.5 + 12 = 55 units

4) They are not similar since 16/20 does not equal 9/12 .

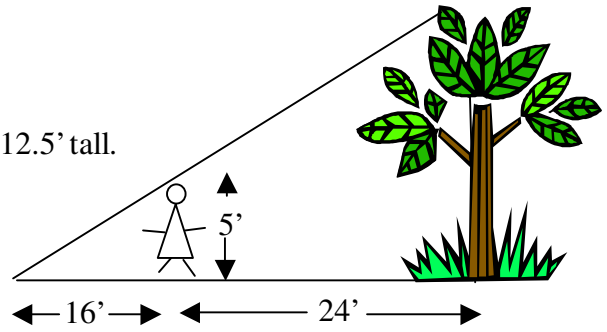
5) PA corresponds to IT, so use the Pythagorean theorem to find IT first. IT = $\sqrt{260} \doteq 16.12$.
Using proportions, 18/30 = 16.12/ x and PA $\doteq$ 26.87.

6) 22/33 = 16/u, and u = 24 .

7) if the ratios of the areas are 25:49, the ratio of the radii is 5:7 . So 5/7 = 12/x and the larger radius is 84/5 or 16.8 .

8) x = 8.4

9) Using ~Δs , 5/16 = x/40 … so the tree is 12.5' tall.



10) m $\doteq$ 17.78 ; n = 12.6

11) The ratio of the volumes is 27:64, so using proportions 27/64 = x/128π and the smaller volume, x , is 54π cm^3 .