EMA
Proportions Applications

Name Key
Date _____ Period _____

1. Suppose you traveled 85 miles in $1\frac{1}{2}$ hours. Moving at the same speed, how many miles would you cover in $3\frac{1}{4}$ hours?

$\frac{\text{MILES}}{\text{HOURS}}: \frac{85}{1.5} = \frac{X}{3.25}$ $\Big\}$ $1.5X = 276.25$

$X = 184.17$ MILES

2. A house is 15 feet tall and its shadow is 40 feet long. At the same time, the shadow of a nearby building is 300 feet long. Find the height of the building.

$\frac{\text{HOUSE/BUILDING}}{\text{SHADOW}}: \frac{15}{40} = \frac{X}{300}$ $\Big\}$ $40X = 4500$

$X = 112.5$ FEET

3. If 3 apples cost \$1.19, find the cost of 15 apples at the same rate.

$\frac{\text{COST}}{\text{AMOUNT OF APPLES}}: \frac{1.19}{3} = \frac{X}{15}$ $\Big\}$ $3X = 17.85$

$X = \$5.95$

4. Harry scores an average of 7 foul shots out of every 10 attempts. At the same rate, how many shots would be scored in 200 attempts?

$\frac{\text{SHOTS}}{\text{ATTEMPTS}}: \frac{7}{10} = \frac{X}{200}$ $\Big\}$ $10X = 1400$

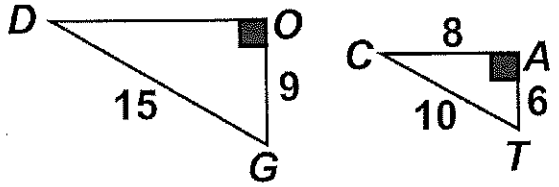
$X = 140$ SHOTS

5. A recipe calls for $1\frac{1}{2}$ cups of sugar for a 3 pound cake. How many cups of sugar should be used for a 5 pound cake?

$\frac{\text{CUPS OF SUGAR}}{\text{NUMBER OF POUND CAKE}}: \frac{1.5}{3} = \frac{X}{5}$ $\Big\}$ $3X = 7.5$

$X = 2.5$ CUPS OF SUGAR

6. $\Delta DOG \sim \Delta CAT$. Find the length of DO.



$\frac{\Delta DOG}{\Delta CAT}: \frac{DO}{8} = \frac{9}{6}$

$72 = 6(DO)$

$12 = DO$

OR

$\frac{DO}{8} = \frac{15}{10}$

$120 = 10(DO)$

$12 = DO$

7. A model train is built to a scale of 1:64 feet. Find the actual length for a piece on the model that is 0.75 inches.

$\frac{\text{MODEL}}{\text{ACTUAL}}: \frac{1 \text{ ft}}{64 \text{ ft}} = \frac{.75(12) \text{ in}}{x \text{ ft}}$

$x = 576$ ft

8. A tree casts a shadow 41 m long. At the same time, the shadow cast by a 58 m tall statue is 95 m long. Find the height of the tree to the 4th decimal place.

$\frac{\text{TREE/STATUE}}{\text{SHADOW}}: \frac{x}{41} = \frac{58}{95}$

$95x = 2378$

$x = 25.03$ m

9. At a certain college, the ratio of men to woman is 5 to 4. If there are 2800 men, how many woman are there?

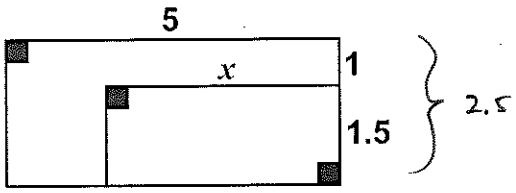
$\frac{\text{MEN}}{\text{WOMAN}}: \frac{5}{4} = \frac{2800}{x}$

$5x = 11200$

$x = 2240$ WOMAN

Find the length of x.

10.

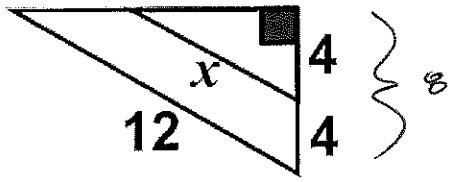


$\frac{\text{BIG } \square}{\text{SMALL } \square}: \frac{5}{x} = \frac{2.5}{1.5}$

$2.5x = 7.5$

$x = 3$

11.

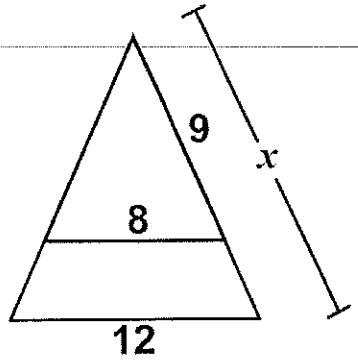


$\frac{\text{BIG } \triangle}{\text{SMALL } \triangle}: \frac{12}{x} = \frac{8}{4}$

$8x = 48$

$x = 6$

12.



$\frac{\text{BIG } \triangle}{\text{SMALL } \triangle}: \frac{12}{8} = \frac{x}{9}$

$8x = 108$

$x = 13.5$