

**I. Ratios and Proportions. Simplify each ratio.**

1)  $\frac{32}{72}$  \_\_\_\_\_      2) 25:50:125 \_\_\_\_\_      3) 31:62:93 \_\_\_\_\_

Solve for the variable.

4)  $\frac{3}{4} = \frac{x}{8}$

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

6)  $\frac{r+2}{7} = \frac{5}{7}$

7)  $\frac{2}{7} = \frac{x}{-42}$

8)  $\frac{t-5}{7} = 3$

9)  $\frac{5m+3}{-6} = \frac{5m-3}{4}$

10)  $\frac{x+2}{3} = \frac{x-1}{6}$

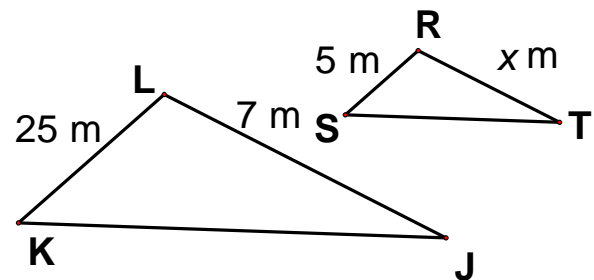
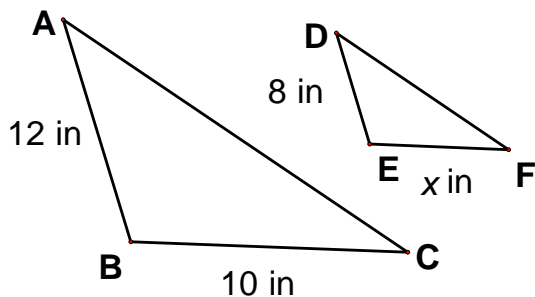
11)  $\frac{n}{3} = \frac{n+4}{-7}$

12) If 500 sheets of paper weigh 7 pounds, how much do 2 sheets weigh?

13) Kathy can type 13 business letters in 2 hours. At the same rate, how many letters can she type in 8 hours?

**II. Similar Triangles**

14) These 2 triangles are similar. Find the measures of the missing sides.

**III. Percents. Set up an equation or a proportion for each problem.**

15) Eight is what percent of 20?

16) What is 75% of 24?

17) Twelve is 20% of what number?

18) Find 60% of 90.

19) A price decreased from \$48 to \$36. Find the percent of decrease.

20) A price increased from \$129 to \$183.51. Find the percent of increase.

21) Mrs. Evans' salary of \$25,000 was increased by 8%. What was Mrs. Evans' new salary?

22) A pair of jeans cost \$26.95. Today there is a 23% discount. The sales tax is 8.5%. Find the sale price, the sales tax and the total price.

- 23) John and Mary go to Trejos and the bill is \$24.67. John wants to leave a 15% tip. How much tip will he leave and how much is the total bill?
- 24) A doctor's salary increased from \$60,900 to \$74,050. Find the percent of change.
- 25) A house costs \$185,000. If the annual taxes are 8%, how much will the taxes be?
- 26) Ellie the Elephant lost some weight. She was originally 1,200 pounds and is now 950 lbs. What was the percent change in her weight?
- 27) George Lee paid \$205.80 for his senior class photographs. This did not include the 7% sales tax. What was the price of the pictures after taxes?
- 28) An item sales for \$76 and an 18% discount. The tax is 9.75% What was the final price?

**IV. Unit Rate**

- 29)  $\$168/2 \text{ days} = \underline{\hspace{2cm}} \text{dollars/day}$
- 30)  $258 \text{miles}/3 \text{ hours} = \underline{\hspace{2cm}} \text{miles/hour}$

**SOLVE EACH OF THE FOLLOWING. DRAW A DIAGRAM WHERE NEEDED.**

- 31) A Tower casts a shadow of 64 feet. A 6-foot tall pole near the tower casts a shadow 8 feet long. How tall is the tower?
- 32) A flag pole casts a shadow 3 meters long. A woman near the pole casts a shadow 0.75 meters long. The woman is 1.5 meters tall. How tall is the flag pole?