

1) Answer the following percentage questions:

(hint: use variables to find the missing value)

a) What is 35% of 80?

b) What percent of 20 is 30?

c) 45% of what is 9?

2) Find the percent increase/decrease in the following problems

a) Your friend diets and goes from 125 pounds to 110 pounds. What was her percentage weight loss?

b) An item that regularly sells for \$425 is marked up to \$500. What is the percent increase of the price?

- 3) On a separate piece of paper, do the following compass and straight-edge constructions:
- a) Draw a line segment, and construct the perpendicular bisector of that segment.
 - b) Draw an equilateral triangle.
 - c) By bisecting your previous two drawings, construct a 45° and 30° angle
 - d) (Challenge) Using these three compass and straightedge techniques, construct as many of these angles as you can:
 - a) 150°
 - b) 120°
 - c) 75°
 - d) 135°
 - e) 15°
 - f) 22.5°

- 4) Members of a family decided to invest into their kids' college fund. Each month mom contributes \$200. Dad decided to beat her contribution and contributes \$250 a month. Grandma decided to contribute even more and puts in \$350 each month. Grandpa wants to be the most generous and contributes \$400 each month. How long will it take to accumulate \$60,000 in the college fund?

- 5) Calculate:

$$\text{a) } \frac{\frac{\frac{1}{2} + \frac{1}{3}}{\frac{1}{2} - \frac{1}{3}}}{2} =$$

$$\text{b) } \frac{\frac{\frac{1}{2} - \frac{1}{3}}{1 - \frac{3}{4}}}{3} =$$

$$\text{c) } \frac{1 - \frac{7}{12}}{\frac{\frac{1}{2} + \frac{1}{4}}{1}} =$$