Math 107
Spring 2017
Lecture 4

Translate only:

Twice Some number is equal to 10 less than Square of the number. Subtracted from 10

$$10-2x = x^2-10$$

20% of what number is 75?

$\frac{20}{100} \cdot x = 75$

$.20x = 75$

$.2x = 75 \quad x = \frac{75}{.2} \quad \boxed{x = 375}$

20% of 375 is 75.

what percent of 380 is 9.5?

P% of 380 is 9.5?

$\frac{P}{100} \cdot 380 = 9.5$

$\frac{380}{100} P = 9.5$

$3.8P = 9.5 \Rightarrow P = \frac{9.5}{3.8} \quad \boxed{P = 2.5}$

So 2.5% of 380 is 9.5

John Painted 3 Rooms in 10 hrs. Use Proportion to find out how long it takes him to Paint 8 rooms.

$$\frac{3 \text{ Rooms}}{10 \text{ hours}} = \frac{8 \text{ Rooms}}{x \text{ hrs}}$$

$$\frac{3}{10} = \frac{8}{x}$$

Cross-Multiply

$$3x = 80$$

$$x = \frac{80}{3} = 26.\overline{6}$$

About 27 hrs

$$\frac{1.25 \text{ inches}}{50 \text{ Miles}} = \frac{12.5 \text{ inches}}{x \text{ Miles}}$$

Solve $\frac{1.25}{50} = \frac{12.5}{x}$

Cross-Multiply

$$1.25x = 50(12.5)$$

$$1.25x = 625$$

$$x = \frac{625}{1.25}$$

$$x = 500$$

500 Miles

Parts

There were 30 students in the classroom. The number of females was 4 more than the number of males.

How many females in the classroom.

Parts: Males → x

Females → $x+4$

Total 30

Males + Females = Total

$x + x + 4 = 30$

$2x + 4 = 30$

$2x = 30 - 4$

$2x = 26$

$x = \frac{26}{2}$

$x = 13$

$13 + 4$

17 Females.

Jose has 37 coins. Dimes and nickels only. The number of dimes was 1 more twice the number of nickels. How many of each does he have?

Total = 37

Parts

Dimes → $2x + 1$

Nickels → x

Nickels + Dimes = Total

$x + 2x + 1 = 37$

$3x + 1 = 37$

$3x = 37 - 1$

$3x = 36$

$x = \frac{36}{3} \Rightarrow x = 12$

12 Nickels

&

25 Dimes

Maria purchased 55 pens in blue and red only. the number of red pens was 5 fewer than 3 times the number of blue pens. How many red pens did she purchase? Total → 55

Parts: Blue → x → 15 blues

Red → $3x - 5$ → $3(15) - 5 = 40$

Blue + Red = Total

$x + 3x - 5 = 55$

$4x - 5 = 55$

$4x = 55 + 5$

$4x = 60$

$x = \frac{60}{4}$

$x = 15$

40 Red Pens

A piece of wood is 38 inches long. You need to cut it to 3 pieces. You need one piece to be twice as long as another piece. the third piece is 4 inches shorter than 3 times the smaller of the first 2 pieces. find the measure of all three pieces. Total = 38

First	Second	Third
x	$2x$	$3x - 4$

First + Second + Third = 38

$x + 2x + 3x - 4 = 38$

$6x - 4 = 38$

$6x = 38 + 4$

$6x = 42$

$x = 7$

7 inches, 14 inches, and 17 inches.