

Math 107

Spring 2017

Lecture 3

Some Review:

① Translate only

4 times the difference of Some number and 8 is equal to 10 less twice the number.

$$4(x - 8) = 10 - 2x$$

Twice the Sum of Some number squared and 10 is equal to the number reduced by 8.

$$2(x^2 + 10) = x - 8$$

4.75% of what number is 213.75?

By Translation

$$\frac{4.75}{100} \cdot x = 213.75$$

$$.0475x = 213.75$$

$$x = \frac{213.75}{.0475} \quad \boxed{x = 4500}$$

4.75% of 4500
is 213.75.

By Proportion
whole comes after of

$$\frac{P}{100} = \frac{\text{Part}}{\text{whole}} \quad \frac{4.75}{100} = \frac{213.75}{x}$$

Part comes with is

$$\frac{4.75}{100} = \frac{213.75}{x}$$

Cross-Multiply

$$4.75x = 100(213.75)$$

$$x = \frac{100(213.75)}{4.75}$$

$$\boxed{x = 4500}$$

4.75% of 4500 is 213.75

What percent of 5500 is 440?

By Translation

$$\frac{P}{100} \cdot 5500 = 440$$

$$55P = 440$$

$$P = \frac{440}{55}$$

$$P = 8$$

8% of 5500 is 440.

$$5500P = 440(100)$$

$$P = \frac{440(100)}{5500}$$

$$P = 8$$

By Proportion

$$\frac{P}{100} = \frac{\text{Part}}{\text{whole}}$$

$$\frac{P}{100} = \frac{440}{5500}$$

Cross-Multiply

After of

after is

4.8 hrs to paint 3 rooms.

At this rate, how long to paint 5 rooms?

$$\frac{3 \text{ Rooms}}{4.8 \text{ hrs}} = \frac{5 \text{ Rooms}}{x \text{ hrs}}$$

Solve

$$\frac{3}{4.8} = \frac{5}{x}$$

$$3x = 5(4.8)$$

$$x = \frac{5(4.8)}{3}$$

$$x = 8$$

8 hrs to Paint
5 Rooms.

Howard weighs 85 pounds on earth, but he weighed 50 pounds in space.

At this rate, how much a person that weighs 255 pounds on earth would weigh in space?

$$\frac{85 \text{ lb. Earth}}{50 \text{ lb. Space}} = \frac{255 \text{ lb. Earth}}{x \text{ lb. Space}}$$

150 lb.

$$\frac{85}{50} = \frac{255}{x} \rightarrow x = \frac{50(255)}{85}$$

$$85x = 50(255) \rightarrow x = 150$$

Among 400 people in city of Chino, 135 of them voted for Mr. Trump.

At this rate, how many people in city of Chino voted for him if the population is 75000.

$$\frac{400 \text{ People}}{135 \text{ voted for him}} = \frac{75000 \text{ people}}{x \text{ voted for him}}$$

$$\frac{400}{135} = \frac{75000}{x}$$

$$x = \frac{135(75000)}{400}$$

$$x = 25312.5$$

About

25313

People Voted for him.

$$400x = 135(75000)$$

Spiral Method:

Always go back & review old materials

WP Section 3 Due next week.

Late work are still welcomed.

There are 19 people in this classroom.
The number of females is 5 more than
the number of males. How many of
each?

Parts: Males $\rightarrow x$

Total = 19

Females $\rightarrow x + 5$

Sum of the Parts is equal to the total.

$$\boxed{\text{Males}} + \boxed{\text{Females}} = \boxed{\text{Total}}$$

$$x + x + 5 = 19$$

$$2x + 5 = 19$$

$$2x \quad +5 \quad -5 = 19 - 5$$

$$2x = 14$$

$$x = \frac{14}{2} \quad \boxed{x=7}$$

7 Males & 12 Females

John Picked up 23 pens in black and red.
the number of red pens was 1 fewer than
twice the number of black pens. How many
of each?

$$\text{Total} = 23$$

$$\text{Parts} \quad \text{Black} = x$$

$$\text{Red} = 2x - 1$$

$$\boxed{\text{Black}} + \boxed{\text{Red}} = \text{Total}$$

$$x + 2x - 1 = 23$$

$$3x - 1 = 23$$

$$3x \quad -1 \quad +1 = 23 + 1$$

$$3x = 24$$

$$x = \frac{24}{3} \quad \boxed{x=8}$$

8 black
&
15 Red