

(Friday)

WP RWS #3

I am preparing for Tomorrow's test: _____

1) Translate English to math:

a. the sum of a number and eleven is thirty-eight

$$x + 11 = 38$$

b. A number decreased by thirty is the same as fourteen minus three times the number.

$$x - 30 = 14 - 3x$$

2) Use formulas:

$$S = \frac{w - 10e}{m}$$

$$t = -0.0035a + g$$

This is the formula for a person's typing speed. S is speed in words per minute, w is number of words typed, e is errors and m is number of minutes typing.

For altitudes up to 36,000 ft. the relationship between temperature and altitude can be described with the formula above where t is temperature at elevation (in F°) a is the change in altitude and g is ground temperature.

a. If Raine's typing speed is 43 words per minute after typing 589 words in 13 minutes, how many errors did Raine make?

$$13 \cdot 43 = \frac{589 - 10e}{13} \cdot 13$$

$$559 = 589 - 10e \quad \text{3 errors}$$

$$-589 \quad -589$$

$$-30 = -10e$$

$$-3 = -e$$

$$e = 3$$

b. It's a 67° day in the valley (elev. 6,000 ft). Andy is on top of the Grand Teton, 13,770 ft. up. What is the temperature for Andy?

$$\begin{array}{r} 13,770 \\ - 6,000 \\ \hline 7,770 \end{array}$$

$$t = -0.0035(7,770) + 67$$

$$t = -27.195 + 67$$

$$t = 39.81^\circ$$

3) Percent Problems:

a. 30 is what percent of 82?

$$30 = x(82)$$

$$\frac{30}{82} = \frac{x}{82}$$

$$36.59\% \quad \text{or} \quad 37\%$$

b. Four people go out to lunch and receive a check for \$42.50. The group is unhappy with the service at the restaurant, so they only leave a 5% tip. How much was spent at the lunch?

$$42.50 + 0.05(42.50) = T$$

$$\$44.15 = T$$

c. The number of students at BHS who own a motorcycle is 60. That number is expected to decrease by 15% next school year. How many students will own a motorcycle next school year?

$$60 - 0.15(60) = T$$

$$51 \text{ students}$$

4) General: Write an equation, then solve it

a. Daisy paid \$75.00 to become a member of The Ridge Athletic Club. Then she had to pay a monthly membership fee. Her total cost for 9 months was \$524.55. How much is the monthly fee?

$$75 + 9x = 524.55$$

$$\$49.95$$

b. Joey makes \$55,000 and is getting annual raises of \$2,500 each year. Chandler makes \$62,000, with annual raises of \$2,000.

1. How many years will it take for Joey & Chandler to make the same salary?

$$55,000 + 2,500x = 62,000 + 2,000x$$

$$7,000 = 500x$$

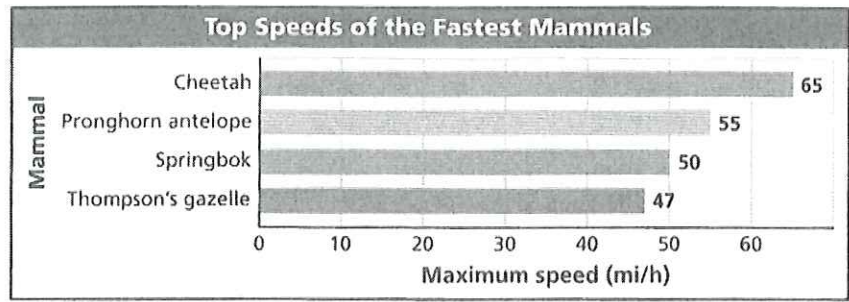
$$14 \text{ years}$$

2. How much money will the two friends be making in that year

$$55,000 + 2,500(14) = \text{salary}$$

$$\$90,000 = \text{salary}$$

c. Use the chart to answer the questions below.



1. If the gazelle runs at top speed for 2 hours, how far has it traveled? $2(47) = 94$ miles

2. Write an expression for how far the gazelle travels if it runs for x hours. $47x$ or $47x$

3. Write an expression for how far the cheetah runs at top speed for x hours. $65x$

4. A cheetah and a gazelle are running at top speed. The cheetah is 1 mile behind the gazelle. Write an equation for how long it will take the cheetah to catch the gazelle and solve it.

gazelle distance = cheetah distance

(the head) $\rightarrow 1 + 47x = 65x$
 $1 = 18x$

$.06$ or $\frac{1}{18}$ hour

5. A cheetah can maintain top speed for 300 yards. Will he be able to catch the gazelle?

$65(.06) = 3.9$ miles

Nope, won't catch

5) Conversions

a. 1 mile is 5,280 feet and 2.54 centimeters is equivalent to 1 inch. Use a series of conversions to calculate the number of centimeters in 1.25 miles.

$\frac{1.25 \text{ miles}}{1} \left(\frac{5,280 \text{ ft}}{1 \text{ mi}} \right) \left(\frac{12 \text{ inches}}{1 \text{ ft}} \right) \left(\frac{2.54 \text{ cm}}{1 \text{ in.}} \right) = 201,168 \text{ cm.}$

b. The tropical giant bamboo can grow 11.9 feet in 3 days. What is this rate of growth in inches per hour?

$\frac{11.9 \text{ ft}}{3 \text{ days}} \left(\frac{12 \text{ in}}{1 \text{ ft}} \right) \left(\frac{1 \text{ day}}{24 \text{ hr}} \right) = \frac{142.8}{72} = 1.98 \text{ inches per hour}$
 (Amazing! And strong! Buy bamboo)

6) Proportions

a. A 16 ft. tall tree casts a 4.5 ft. shadow. At the same time of day, how long will a 5.75 ft girl's shadow be?

Height $\frac{16}{4.5} = \frac{5.75}{x}$
 Shadow $16x = 25.875$
 $x = 1.62 \text{ ft}$

b. In a recipe $\frac{1}{4}$ cup of cocoa is needed for 6 people. How much cocoa will be needed for 75 people?

cocoa $\frac{.25}{6} = \frac{x}{75}$
 people $18.75 = \frac{6x}{6}$
 3.125 cups