Unit 3 Study Guide

RP1: Unit Rates

1) What value for x makes the proportion true?

$$\frac{1/8}{3/4} = \frac{1/2}{x}$$

$$\frac{1}{8}x = \frac{3}{4}\left(\frac{1}{2}\right)$$

$\frac{1}{8}x = \frac{3}{8}$ (multiply by the reciprocal)

X = 3

2) A delivery truck traveled 133 miles in 3.5 hours. What was the average speed of the delivery truck in miles per hour?

$$\frac{133}{3.5} = 38\ miles\ per\ hour$$

3)Lauren jogs at a rate of 2 miles every $\frac{2}{5}$ hour. What is her unit rate?

$$\frac{2}{2/5} = 5\ miles\ per\ hour$$

4)Which would be the best buy?

7 pencils for $1.40

6 pencils for $1.35

15 pencils for $13.65

8 pencils for $1.70

5)Jeremy swims 5 3/5 kilometers in a 7 day period. He swims the same distance ach day. What distance does he swim in a day?

$$\frac{5\frac{3}{5}}{7} = \frac{4}{5}\ or\ 0.8\ km\ per\ day$$

6)The table represents the price of McDonald's Value Meals.

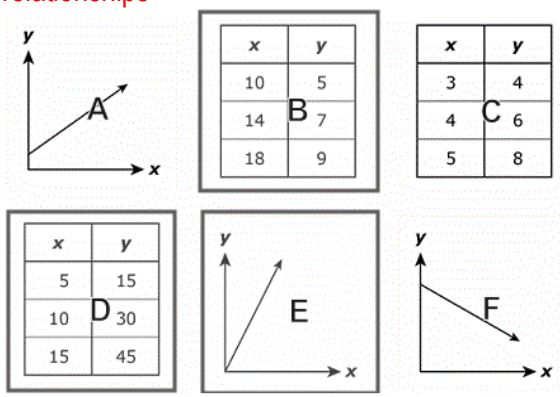
# of Meals	2	4	6	8
Price $	10.50	21.00	31.50	42.00

What is the constant of proportionality?

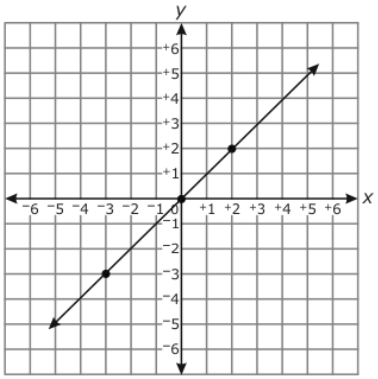
$$\frac{10.50}{2} = \$5.25$$

RP2: Proportional Relationships

7)Which tables and graphs show a proportional relationship? B, D, and E are proportional relationships



8)What is the constant of proportionality for the line on the graph below? K = 1



9)A farmer charges $6 for 4 pounds of tomatoes. Write an equation the farmer can use to find how many dollars he should charge for *p* pounds of tomatoes?

$$\frac{\$6}{4} = \$1.50\ per\ pound$$

Y = 1.50x

G1: Scale Drawing/Factor	10)A map has a scale of ½ inch = 75 miles. If two cities are 3 ¾ inches apart, how many miles apart are they really? $\frac{1/2}{75} = \frac{3\,3/4}{x}$ $\frac{1}{2}x = 281.25$ x. = 562.5 miles	11)On a scale drawing with a scale of 1 cm:0.75 m, the height of a tree is 6.5 cm. How tall is the actual tree? $\frac{1cm}{0.75m} = \frac{6.5cm}{x}$ X = 4.875m	12)On a blueprint, a guest bedroom has dimensions 3 cm by 5 cm. If the blueprint is drawn using the scale of ½ cm = 2 ft, what is the actual **AREA** of the guest bedroom? $240\ ft^2$ *See weekly warm up for how to solve.*
RP3: Percent Problems	13)Jake sold a total of $8,400 worth of clothing last week at his store. If his commission is 12% of sales, how much commission did he earn? 8400 x 0.12 = $1,008	14)Angie has $1,032 in her savings account. If the bank pays 3.5% simple interest on savings, how much does she earn in one year? *(I = P r t)* *I = 1032 x 0.035 x 1* *I - $36.12*	15)The $249.99 baseball bat that Mrs. King purchased was on sale for 15% off. What amount did Mrs. King get off the price? 249.99 x 0.15 = $37.50 off
	16)A store spends $10 for each pair of Brand X jeans and adds a 120% markup to the cost. What is the selling price of the jeans? 10 x 1.2 = 12 10 + 12 = $22 selling price	17)Coretta's bowling average decreased from 158 to 133. What is the percent decrease to the nearest tenth of a percent? $\frac{change}{original} = \frac{158-133}{158} = \frac{25}{158} = 15.8\%$	18)A backpack that normally sells for $39 is on sale for 33% off. Find the amount of the discount and the sale price. Discount= $12.87 (39 x 0.33) New Sale Price = $26.13 (39 – 12.87)