Name: _____ Date: _____ Period: _____

Identifying & Solving Proportional Relationships

Part 1: Identifying Proportional Relationships

If the pair of ratios is proportional, write "equivalent" in the blank and place a = between each pair of ratios. If the pair is not, write "not equivalent" and place a ≠ in the middle.

A) $\frac{3}{4}$ $\quad$ $\frac{9}{12}$

B) $\frac{7.5}{10}$ $\quad$ $\frac{6}{8}$

C) $\frac{16}{24}$ $\quad$ $\frac{10}{18}$

D) $\frac{9}{12}$ $\quad$ $\frac{3}{5}$

_____ _____ _____ _____

E) $\frac{9}{24}$ $\quad$ $\frac{18}{48}$

F) $\frac{6}{20}$ $\quad$ $\frac{3}{10}$

G) $\frac{1}{5}$ $\quad$ $\frac{1}{4}$

H) $\frac{11}{6}$ $\quad$ $\frac{5.5}{3}$

_____ _____ _____ _____

Write the two ratios (include units!) represented in the problem. Then answer the question.

I) A cookie recipe that makes 48 cookies calls for 2 cups of flour. A different cookie recipe that makes 60 cookies calls for 3 cups of flour. ***Are these rates equivalent? Prove by simplifying***.

J) At the school book sale, Michael bought 3 books for $6. Darnell bought 5 books for $10. ***Are these costs proportional? Prove by using cross products.***

Answer: _____

Answer: _____

K) Netflix has 18 dramas for every 20 comedy shows. Hulu has 6 dramas for every 10 comedies. ***Are these ratios equivalent? Prove by multiplying or dividing.***

L) Jessica can do 60 jumping-jacks in 2 minutes. Dale can do 150 jumping jacks in 5 minutes. ***Are these rates proportional? Prove any way you want!*** 😊

Answer: _____

Answer: _____

Part 2: Solving for the Unknown

Solve each proportional relationship for the unknown amount. You must show your thinking (even if it's just writing "x2" or "÷10) to receive credit!

1) $\frac{60}{10} = \frac{33}{r}$

2) $\frac{5}{3} = \frac{a}{75}$

3) $\frac{18}{x} = \frac{6}{10}$

Write the two ratios (include units!) represented in the problem. Then solve for the unknown amount using any method. Remember to include UNITS in your answer!

4) Toilet paper is on sale – 3 packs for $12.45! How much will it cost for 8 packs of toilet paper?

5) The waiting time to ride a roller coaster is 20 minutes when 150 people are in line. How long is the waiting time when 240 people are in line?

6) Ingrid types 3 pages for every 4.5 pages Tania types. If Ingrid types 11 pages, how many pages will Tania have typed?

7) A 12-ounce bottle of shampoo lasts Enrique 16 weeks. How long would you expect an 18-ounce bottle of the same brand to last him?

8) A brownie recipe calls of 2 cups of sugar for every $\frac{3}{4}$ bar of melted chocolate. How bars of melted chocolate are needed for 6 cups of sugar?

9) Merlin bought 5 pounds of Belgian chocolate for $64.75 (some chocolate is just that good). At this rate, how much would it cost Merlin to buy 3 pounds of chocolate?