

You may use a calculator, but be sure to show all of your work!

Name _____

Take Home and Check – Unit 2 Part 1 Tiers A, B, C

A, B, C

Ann, Bob and Cal work in the mall. Below is a table showing the amount of money each made for the hours worked this week.

Person	Hours	Money
Ann	20	\$200.00
Bob	10	\$105.00
Cal	16	\$184.00

SHOW ALL OF YOUR WORK!

1) Who makes the least money per hour?

2) Who make the most per hour?

$$\text{Ann} = \frac{200}{20} = \$10/\text{hr}$$

$$\text{Bob} = \frac{105}{10} = \frac{\$10.50}{\text{hr}}$$

$$\text{Cal} = \frac{184}{16} = \frac{\$11.50}{\text{hr.}}$$

1) Least = Ann

2) Most = Cal

A, B, C

3) The flight from Oakland to Salt Lake City was 720 miles and took 180 minutes. Make a unit rate.

$$3) \quad \frac{720 \text{ miles}}{180 \text{ mins}} = \frac{4 \text{ miles}}{1 \text{ min}}$$

A, B, C

4) Jonathan can jog $3\frac{2}{5}$ miles in $\frac{7}{8}$ hour.

Find how many miles he jogs in an hour. Do not change to decimals, until the end.

$$\frac{3\frac{2}{5}}{\frac{7}{8}} = \frac{\frac{17}{5}}{\frac{7}{8}}$$

$$\frac{17}{5} \times \frac{8}{7} = \frac{136}{35} = \boxed{\frac{3.89 \text{ miles}}{1 \text{ hr.}}}$$

5) Use the table to determine how many people ate if 426 grapes were used?

A, B, C

people	grapes
1	6
5	30
?	426

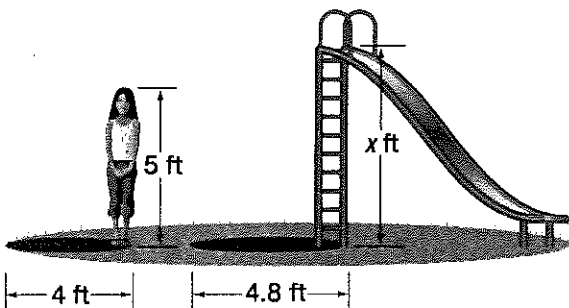
$$\frac{426}{6} = \boxed{71 \text{ grapes}}$$

A, B, C

6) How tall are the stairs on the slide?

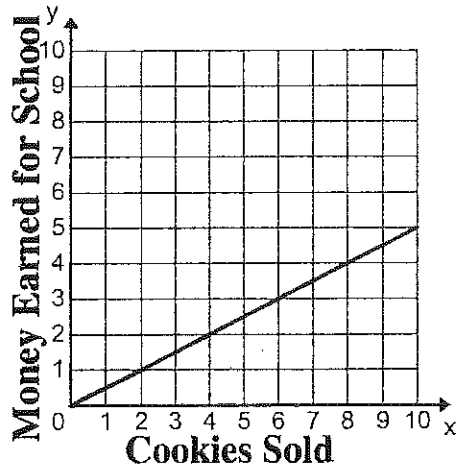
$$\frac{5}{4} = \frac{x}{4.8}$$

$$\frac{4x}{4} = \frac{24}{4}$$
$$\boxed{x = 6 \text{ ft}}$$



A, B, C

7) Tell what the unit rate is in the graph below. Explain your answer.



7)

$$\frac{\$1}{2 \text{ cookies}}$$

$$\frac{\$.50}{\text{Cookie}}$$

B, C

8) John earns \$350 a week (gross pay). His take-home pay, however, is \$295. This is because taxes are taken out of the gross pay. What is the ratio of his gross pay to his take-home pay.

8)

$$\frac{350}{295} = \frac{\$70 \text{ gross}}{\$59 \text{ take-home}}$$

B, C

9) A drawing of a surfboard in a catalog shows its length as 8 inches. Find the actual length of the surfboard if $\frac{1}{2}$ inch length on the drawing corresponds to $\frac{3}{8}$ foot of actual length.

9)

$$\frac{\text{New}}{\text{Original}} = \frac{.5}{\frac{3}{8}} = .375$$

$$\frac{.5}{.375} = \frac{8}{x}$$

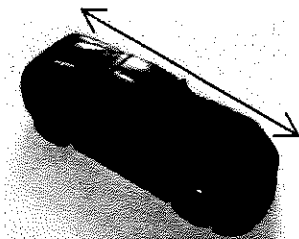
$$.5x = \frac{3}{.5}$$

$$x = 6 \text{ in}$$

B, C

10) A toy company is redesigning its packaging for model cars. The graphic design team needs to take the old image shown below and resize it so that $\frac{1}{2}$ inch on the old packaging represents $\frac{1}{3}$ inch on the new package. Find the length of the image on the new package.

Car image length on old packaging measures 2 inches.



10)

$$\frac{\frac{1}{3}}{\frac{1}{2}} = \frac{x}{2}$$

$$\frac{1}{2}x = \frac{2}{1} \times \frac{1}{3} = \frac{2}{3}$$

$$\frac{\frac{1}{2}x}{\frac{1}{2}} = \frac{\frac{2}{3}}{\frac{1}{2}}$$

$$x = \frac{2}{3} \times \frac{2}{1} = \frac{4}{3} = 1\frac{1}{3} \text{ in}$$

A

- 11) Josh has 300 DVDs and 75 Blu-ray movies. What is the unit rate of DVDs to Blu-ray movies? *simplified ratio*

11)

$$\frac{300}{75} =$$

$$\frac{4 \text{ DVDs}}{\text{Blu-rays}}$$

A, B, C

- 12) Garrett drove 432 miles on 18 gallons of gas. Derick drove 364 miles on 14 gallons of gas. Who had the better gas mileage?

12)

G =

$$\frac{432}{18} = 24 \text{ m/gal}$$

D =

$$\frac{364}{14} = 26 \text{ m/gal}$$

* Better gas mileage

A, B, C

- 13) A peanut vendor sells roasted peanuts in three sized bags: 2 pounds for \$3, 5 pounds for \$7.50, or 8 pounds for \$12. Which is the best buy?

$$\frac{\$3}{2 \text{ lbs}} = \frac{\$1.50}{1 \text{ lb}}$$

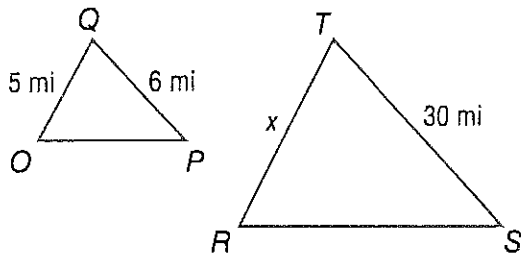
$$\frac{\$7.50}{5 \text{ lbs.}} = \frac{\$1.50}{1 \text{ lb.}}$$

$$\frac{\$12}{8 \text{ lbs}} = \frac{\$1.50}{1 \text{ lb.}}$$

They are all the same

A, B, C

14) How long is side x?



14)

$$\frac{5}{x} = \frac{6}{30}$$

$$6x = 150$$

$$x = 25 \text{ mi}$$

A, B, C

15) In one day you earn \$75 for 8 hours of work. If you work 37.5 hours for the week, what will your weekly pay be?

15)

$$\frac{\$75}{8} = \frac{x}{37.5}$$

$$8x = 2812.50$$

$$x = \$351.56$$

C

16) A model car has a scale factor of 1 : 48. If the tires on the model car have a diameter of 1/4 inch, what is the diameter of a tire on the actual car?

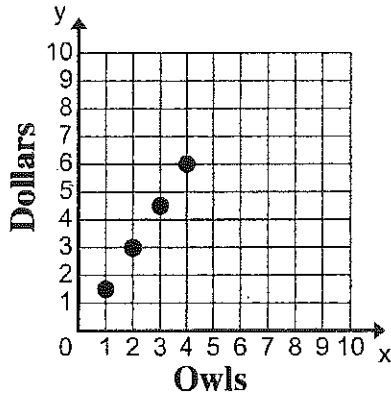
16)

$$\frac{1}{48} = \frac{\frac{1}{4}}{x} = .25$$

$$x = 12 \text{ in}$$

A, B, C

- 17) The graph represents the relationship between x (the number of owls fed) and y (the number of dollars spent). What is the amount of money that will be spent to feed 10 owls?



17)

$$\frac{\$3}{2 \text{ owls}} = \frac{\$1.50}{1 \text{ owl}}$$

$$10 \times 1.50 = \boxed{\$15}$$

A, B, C

- 18) Circle the pairs of numbers which are proportions.

$$\frac{4}{2} \text{ and } \frac{20}{6}$$

$$\frac{4}{3} \text{ and } \frac{16}{12}$$

$$\frac{4}{3} \text{ and } \frac{8}{6}$$

$$\frac{12}{24} \text{ and } \frac{3}{4}$$

18) Proportions are:

$$\boxed{\frac{4}{3} \text{ and } \frac{16}{12}}$$

$$\boxed{\frac{4}{3} \text{ and } \frac{8}{6}}$$

A, B, C

19) Solve the following proportions:

a)

$$\frac{4}{9} = \frac{2}{x}$$

$$a) \frac{4}{9} = \frac{2}{x}$$

$$\frac{4x}{4} = \frac{18}{4}$$
$$\boxed{x = 4.5}$$

b)

$$\frac{6}{a} = \frac{3}{8}$$

$$b) \frac{6}{a} = \frac{3}{8}$$

$$3a = \frac{48}{3}$$
$$\boxed{a = 16}$$

c)

$$\frac{11}{10} = \frac{r}{11}$$

$$c) \frac{11}{10} = \frac{r}{11}$$

$$\frac{10r}{10} = \frac{121}{10}$$

$$\boxed{r = 12.1}$$

A, B, C

20) The key on a map states that 1 inch is equal to 10 miles. Write the scale for the map.

$\frac{1''}{10 \text{ miles}}$