1.) $23 \overset{B}{cm} = \underset{B}{\underline{\quad 230 \quad}} \overset{L}{mm}$
$ L$

2.) $3.4 \overset{B}{km} = \underset{B}{\underline{\quad 3400 \quad}} \overset{L}{m}$
$ L$

$3.400 \overset{\frown\frown\frown}{}$

3.) $0.3 \overset{B}{km} = \underset{B}{\underline{\dfrac{30,000}{}}} \overset{L}{cm}$
$ L$

$0.30000 \overset{\frown\frown\frown\frown}{} 10$

4.) $897 \overset{L}{\underset{B}{mm}} = \underset{L}{\underline{\quad 0.897 \quad}} \overset{B}{m}$

$897 \overset{\frown\frown}{}$

5.) $7352 \overset{L}{\underset{B}{mm}} = \underset{L}{\underline{0.007352}} \overset{B}{km}$

$.007352 \overset{\frown\frown\frown\frown\frown}{}$

Gm

0.000001 Mm   1000 km

0.001 km   1000 m
 3

1 m

10 dm   } 3

100 cm

1000 mm

Math Fundamentals Unit 3 Pre-Test

1.) (2.5 pts each, 15 pts total) Plot each of the following points.

a) (-3, 2) ✓
b) (5, 7)
c) (0, 4)
d) (-8, -2)
e) (-9, 0)
f) (1, -6)

(x, y)

⊖ ⊕
Left Right

⊖ ⊕
Down Up

c (0,4)

a (-3,2)

f (1,-6)
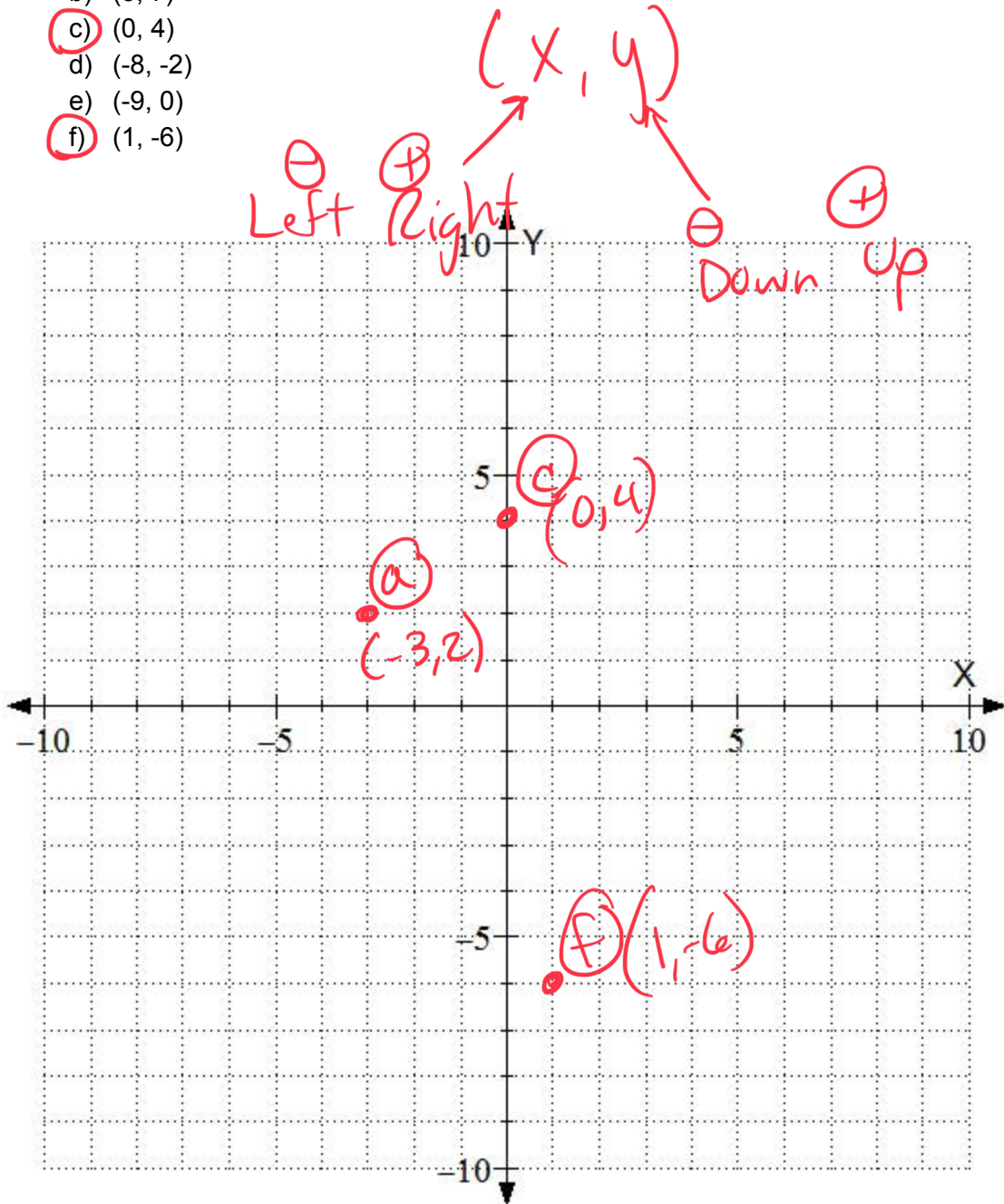
2.) (2.5 pts each, 5 pts total) Find the ratio and unit rate of each.

a) It costs $112 dollars for a group of 8 people to watch Avengers: Endgame.

Ratio ___$112 : 8___

$$\frac{\$112 : 8}{8 \quad 8}$$

This is a rate of ___$14___ dollars per person.

$14 : 1

b) Find the ratio and unit rate:
360 cats from 9 enchanted cottages

Ratio: _____   _____ cats per enchanted cottage

3.) (2.5 pts each, 5 pts total) Answer each of the following. Include unit rate along with the answer.

a) Nate likes 32 teaspoons of sugar for every 4 cups of coffee. If Nate drinks 20 cups of coffee per week, how many teaspoons of sugar does he use?

$$\frac{32 \text{ teaspoons}}{4 \text{ cup of coffee}} = \frac{?}{20 \text{ cups of coffee}}$$

$$\frac{32 * \cancel{20}^5}{\cancel{4}} = \boxed{160 \text{ teaspoons}}$$

b) Jeremy took a total of 20 tests in the semester he was enrolled in 5 college classes. If he needs to take 32 classes to graduate, about how many tests can he expect to take?

unit rate

$$\frac{32 \text{ teaspoons}}{4 \text{ cups}}$$

8 teaspoons/cup * 20 cups

$$\boxed{160}$$

2

4.) (5 pts each, 10 pts total) Solve each using ratios. Include unit rate along with your answer.

a) At the baseball stadium, it costs $39.69 for 7 hot dogs. If you wanted to buy a very conservative snack of 16 hot dogs, how much would it cost?

$$\frac{\$39.69}{7 \text{ hot dogs}} = \$5.67 * 16 \text{ hot dogs} = \boxed{\$90.72}$$

cost per hot dog

b) A recipe called for the ratio of sugar to flour to be 8 : 5. If you used 70 ounces of flour, how many ounces of sugar would you need to use?

5.) (5 pts each, 10 pts total) Determine the proportionality constant utilizing the following table or graph.

$$y = kx$$

a) k =

$$k = \frac{y}{x}$$

Time in minute (x)	10	7	5	9	3
Gallons of Water Used (y)	340	238	170	306	102

34

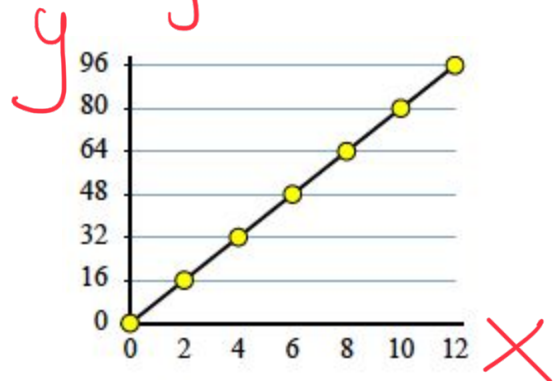$$k = \frac{y}{x} = \frac{170}{5} = \boxed{34}$$

$$y = kx$$
$$y = 34x$$

b) k = 8

Equation: $y = 8x$

$$y = kx$$

$$k = \frac{y}{x} = \frac{16}{2} = \boxed{8}$$

3

6.) (5 pts each, 10 pts total) Use your knowledge of proportions to answer each of the
following:

a) A phone store earned $112.32 after they sold 18 phone cases. Write an equation
that can be used to express the relationship between the total money earned (t) ~~y~~
and the number of cases ~~(c)~~ sold.

$$y = kx$$

$$k = \frac{y}{x}$$

$$\frac{\$112.32}{18} = \$6.24$$

$$\boxed{y = \$6.24x} \qquad \boxed{t = \$6.24c}$$

b) $\dfrac{}{25} = \dfrac{64}{100}$

$$\frac{(64)(25)}{100} = \boxed{16}$$

7.) (2.5 pts each, 10 pts total) Use you knowledge of conversions to answer each of the
following:

a) 18 centimeters = __0.18__ m

b) 306 millimeters = __30.6__ cm

c) 9 kilograms = _____ g

d) 834 milliliters = _____ L

4

8.) (2.5 pts each, 5 pts total) Convert each percent to a decimal.

a) 68%

$$\% \rightarrow decimal$$

$$68. \quad 0.68$$

b) 125%

$$125.$$

$$1.25$$

9.) (2.5 pts each, 5 pts total) Convert each number to a percent.

a) 0.89

$$decimal \rightarrow \%$$

$$0.89 \quad 89\%$$

b) 4.36

$$4.36 \quad 436\%$$

10.)   (5 pts each, 10 pts total) Use your knowledge of percents to answer each of the following:

a) What is 75% of 64?

$$= 0.75 * 64 = 48$$

b) Nate ate 288 pounds of fudge last month. If he expects to eat 20% more fudge this month than last, how much fudge is he expected to eat this month?

decimal

$20\% \rightarrow 0.20$

$$288\left(1 + 0.\overset{\%}{20}\right)$$

$$288(1.20)$$

$$345.6$$

11.) (2.5 pts each, 5 pts total) Divide each.

a) Round to the hundredths place.

$42\overline{)7280}$

b) Round to the hundredths place.

$0.56\overline{)42.78}$

$56\overline{)4278}$

12.) (2.5 pts each, 10 pts total) Solve each problem.

a) $78.006 - 28.739$

$$78.\cancel{006}$$
$$- 28.739$$

b) 43.917 + 8.097

$$43.917$$
$$8.097$$

c) 36.46 × 19.08

36.(46)   2
(19.08) + 2
(4) move decimal

d) Round to the nearest hundredth.

14.082 ÷ 3.2

$$3.2 \overline{)14.082}$$

$$32 \overline{)140.82}$$