

Day 5 Homework: Direct and Inverse Variation

Find the Missing Variable:

$$y = kx \quad k = y/x \quad k = (-4)(2) = -8$$

1)  $y$  varies directly with  $x$ . If  $y = -4$  when  $x = 2$ , find  $y$  when  $x = -6$ .

$$y = -8(-6) = 48$$

2)  $y$  varies inversely with  $x$ . If  $y = 40$  when  $x = 16$ , find  $x$  when  $y = -5$ .

$$y = \frac{k}{x} \quad k = yx \quad k = 40(16) = 640$$

$$-5 = \frac{640}{x} \\ -5x = 640$$

$$x = \frac{640}{-5} = -128$$

Math 2 Honors

Unit 3 Homework

Rolesville High School

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

$$k = yx \quad k = 7(-4) = -28$$

$$y = \frac{-28}{5} = -5.6$$

3) y varies inversely with x. If y = 7 when x = -4, find y when x = 5.

4) y varies directly with x. If y = 15 when x = -18, find y when x = 1.6.

$$y = kx \quad k = y/x = 15 / -18 = \frac{-5}{6}$$

$$y = \frac{-5}{6} (1.6) = \frac{-4}{3}$$

Classify the following as: a) Direct                      b) Inverse                      c) Neither

5)  $m = -5p$  *Direct*

6)  $c = 3v$  *Direct*

7)  $r = \frac{9}{t}$  *Inverse*

8)  $n = \frac{1}{2}f$  *Direct*

9)  $d = 4t$  *Direct*

10)  $z = \frac{-2}{t}$  *Inverse*

What is the constant of variation for the following?

11)  $d = 4t$   $k = 4$

12)  $z = \frac{-2}{t}$   $k = -2$

13)  $n = \frac{1}{2}f$   $k = \frac{1}{2}$

14)  $r = \frac{9}{t}$   $k = 9$

Answer the following questions.

18) If x and y vary directly, as x decreases, what happens to the value of y? *decreases*

19) If x and y vary inversely, as y increases, what happens to the value of x? *decreases*

Answer the following questions:

$$y = kx$$

20) The electric current I, is amperes, in a circuit varies directly as the voltage V. When 12 volts are applied, the current is 4 amperes. What is the current when 18 volts are applied?

$$12 = k(4) \quad k = 12/4 = 3$$

$$18 = 3(x)$$

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

21) The volume V of gas varies inversely to the pressure P. The volume of a gas is 200 cm<sup>3</sup> under pressure of 32 kg/cm<sup>2</sup>. What will be its volume under pressure of 40 kg/cm<sup>2</sup>?

$$y = k/x$$

$$200 = k/32$$

$$200(32) = k = 6400$$

$$y = \frac{6400}{40} = 160$$

Day 6 Homework: Solving Rational Functions

... solution of the equation: