# Equations in Two Variables on Variation

Name_____

MULTIPLE CHOICE.  Choose the one alternative that best completes the statement or answers the question.

Determine whether the variation between the indicated quantities is direct or inverse.

1) The price of an item and the quantity of the item that you can purchase with a given amount of money

    A) Inverse                            B) Direct

1) _____

2) The number of hours worked by an hourly worker and the amount of her paycheck

    A) Direct                            B) Inverse

2) _____

Determine whether the equation represents direct, inverse, joint, or combined variation.

3) $y = 3x^2$

    A) Combined       B) Direct          C) Joint          D) Inverse

3) _____

4) $y = \dfrac{3}{x}$

    A) Joint           B) Inverse       C) Combined      D) Direct

4) _____

Solve the problem.

5) If m varies directly as p, and m = 48 when p = 8, find m when p is 4.

    A) 24            B) 16            C) 64           D) 36

5) _____

6) If s varies directly as $t^2$, and s = 294 when t = 7, find s when t is 9.

    A) 42            B) 63            C) 486         D) 378

6) _____

7) If x varies inversely as v, and x = 6 when v = 8, find x when v = 16.

    A) 3             B) 2             C) 24          D) 64

7) _____

8) If x varies inversely as $y^2$, and x = 6 when y = 10, find x when y = 2.

    A) 150         B) 5             C) 24          D) 180

8) _____

9) If f varies jointly as $q^2$ and h, and f = 36 when q = 2 and h = 3, find f when q = 4 and h = 5.

    A) 48            B) 240        C) 60          D) 15

9) _____

10) If f varies jointly as $q^2$ and h, and f = 36 when q = 3 and h = 2, find q when f = 160 and h = 5.

    A) 2             B) 4             C) 3           D) 5

10) _____

11) If f varies jointly as $q^2$ and h, and f = 24 when q = 2 and h = 3, find h when f = 300 and q = 5.

    A) 2             B) 3             C) 5           D) 6

11) _____

12) If f varies jointly as $q^2$ and h, and f = -54 when q = 3 and h = 3, find f when q = 4 and h = 5.

    A) -32         B) -40        C) -160      D) -10

12) _____

13) The weight of a liquid varies directly as its volume V. If the weight of the liquid in a cubical    13) _____
container 5 cm on a side is 375 g, find the weight of the liquid in a cubical container 4 cm on a side.

   A) 64 g              B) 12 g              C) 44 g              D) 192 g

14) The distance it takes to stop a car varies directly as  the square of the speed of the car. If it takes 112    14) _____
feet for a car traveling at 40 miles per hour to stop, what distance is required for a speed of 49 miles
per hour?

   A) 168.41 ft         B) 168.07 ft         C) 144.06 ft         D) 180.37 ft