Practice – Identifying Independent and Dependent   **p 246**

Name _____ Date _____ Period _____

Determine the independent and dependent variables in the given situations.

1. How much time I spend on the phone affects how much studying I get done.

    a. Independent Variable:

    b. Dependent Variable:

2. The number of books I read over the summer depends on how much time I spend at the pool.

    a. Independent Variable:

    b. Dependent Variable:

3. Sales tax in the state of Maryland is 5% of the purchase price.

    a. Independent Variable:

    b. Dependent Variable:

4. The fire was very big so many firefighters were there.

    a. Independent Variable:

    b. Dependent Variable:

5. To rent a DVD, a customer must pay $3.99 plus $0.99 for every day that it is late.

    a. Independent Variable:

    b. Dependent Variable:

6. In the winter, more electricity is used when the temperature goes down, and less is used when the temperature rises.

    a. Independent Variable:

    b. Dependent Variable:

7. The height of a candle decreases d centimeters for every hour it burns.

    a. Independent Variable:

    b. Dependent Variable:

Determine the independent and dependent variables in the given situations.

8. $\frac{3}{4}x - 5 = y$

    a. Independent Variable:

    b. Dependent Variable:

9. $v = \frac{4}{3}\pi r^3$

    a. Independent Variable:

    b. Dependent Variable:

10. During a sale at a shoe store, all shoes were 25% off the original price. Which statement best describes the functional relationship between the sale price of a pair of shoes and the original price?

    A The sale price is dependent on the original price
    B The original price is dependent on the sale price
    C The sale price and the original price are independent of each other
    D The sale price is dependent on the number of pairs of shoes purchased.

Consider these two variables. Identify them as either independent or dependent. Then complete the sentences.

11. The number of hours I study   My grade point average

_____   _____

_____ depends on _____

_____ is a function of _____

_____ determines _____

Practice - Determine Dependency   **p 246**

Name _____ Date _____ Period _____

Rewrite each situation showing dependency, then identify the dependent and independent variables.

1. The temperature of the water on the heated stove rose each minute.
    Rewrite Sentence:

    Dependent: _____   Independent: _____

2. The restaurant bill was low because only a few meals were ordered.
    Rewrite Sentence:

    Independent: _____   Dependent: _____

Answer the following:

3. A plumber charges $35 to make a house call, plus $25 an hour for labor. The following equation represents *c*, the total cost of a visit for *h* hours: $c = 25h + 35$ What is the independent variable?

    A   Number of hours worked
    B   Amount of money paid
    C   Price of labor
    D   House call charge

4. The table below represents the relationship between the number of gallons of gas in a gas tank and the number of miles that can be driven. What is the independent variable in this situation?

    A   Miles that can be driven
    B   Gallons of gas in tank
    C   Miles per gallon
    D   Price per gallon

# gallons in tank	# miles can drive
8	176
11	242
13	286
16	352

5. Maurice answered all 25 questions on a multiple-choice history exam. His score was computed by multiplying the number of wrong answers by 4 and then subtracting that number from 100. What quantity represents the independent variable and what quantity represents the dependent variable in this situation?

    Independent: Dependent:

6. The cost for copying a document is a function of the number of pages in the document. In this situation, what is the dependent variable?

    A   The cost
    B   The number of pages
    C   The document
    D   The function

7. Sean partially filled a container with water. The container was shaped like a rectangular prism and had dimensions 9 inches long, 8 inches wide, and 10 inches high. If *h* represents the height of the water (in inches), and the volume *V* (in cubic inches) of the water is given by the formula $V = 72h$, which quantity is the independent variable?

    A   The height of the container
    B   The volume of the container
    C   The height of the water in the container
    D   The volume of the water in the container

8. A taxi driver charges an initial fee of $2.00 plus $0.30 per mile. What is the independent variable quantity in this situation?

    A   The initial fee
    B   The total cost charged by the driver
    C   The cost per each mile driven
    D   The number of miles driven

9. A long distance telephone company charges $4.95 per month and $0.07 per minute for phone calls. What is the dependent variable quantity in this situation?

    A   The cost per minute for a long distance call
    B   The total cost for a 10-minute long distance call
    C   The total monthly charge for long distance service
    D   The number of minutes of a long distance call

10. Connie received a statement from her bank listing the balance in her savings account for the past four years. What is the dependent quantity in this table?

Time	Balance
0	$2000
1	$2140
2	$2290
3	$2450
4	$2622

11. For a car traveling at a speed of 50 miles per hour, the relationship between the distance traveled, d, and the time traveled, t, is described by the function $d = 50t$. Which statement is true?

    A   The time traveled depends on the distance traveled.
    B   The distance traveled depends on the time traveled.
    C   The speed of the car depends on the distance traveled.
    D   The speed of the car depends on the time traveled.

12. To find c, the total cost of an order of DVDs from a certain website, the equation $c = 19.99n + 4.99$ can be used, where n represents the number of DVDs ordered. If c is a function of n, which of the following best describes this relationship?

    A   The value of n is constant in relation to c.
    B   The value of n is dependent on c.
    C   The value of c is constant in relation to n.
    D   The value of c is dependent on n.

13. If y is a function of x in $y = -\dfrac{3}{4}x - 5$, which of the flowing statements is true?

    A   The independent variable, y, is 5 less than $-\dfrac{3}{4}$ the dependent variable, x.

    B   The dependent variable, y, is 5 less than $-\dfrac{3}{4}$ the independent variable, x.

    C   The independent variable, x, is 5 less than $-\dfrac{3}{4}$ the dependent variable, y.

    D   The dependent variable, x, is 5 less than $-\dfrac{3}{4}$ the independent variable, y.