

2.1 Solving Basic Linear Equations in One Variable

MULTIPLE CHOICE

1. A(n) _____ is a statement that two quantities are equal.

- a. conclusion
- b. solution
- c. equation
- d. expression
- e. none of these

ANS: C PTS: 1

2. Tell whether the given number is a solution of the equation.

$$\frac{y}{7} = 4; y = 29$$

- a. conflicting solution
- b. not a solution
- c. solution
- d. restricted solution
- e. none of these

ANS: B PTS: 1

3. Tell whether the given number is a solution of the equation.

$$4k + 7 = 7k - 1; k = 4$$

- a. unqualified solution
- b. removed solution
- c. solution
- d. not a solution
- e. none of these

ANS: D PTS: 1

4. Tell whether the number is a solution of the equation.

$$\frac{5+x}{20} - x = \frac{1}{4}; x = 0$$

- a. non-quantified solution
- b. not a solution
- c. unequal solution
- d. solution
- e. none of these

ANS: D PTS: 1

5. Use a property of equality to solve the equation.

$$8 = y - 1$$

- a. 11
- b. 10
- c. 9
- d. 6
- e. 13

ANS: C PTS: 1

6. Use a property of equality to solve the equation.

$$-50 + a = -50$$

- a. -50
- b. 0
- c. -100
- d. 50
- e. 100

ANS: B PTS: 1

7. Use a property of equality to solve the equation.

$$\frac{8}{3} = -\frac{4}{3} + x$$

- a. 0
- b. 4
- c. 7
- d. 6
- e. 5

ANS: B PTS: 1

8. Use a property of equality to solve the equation.

$$\frac{y}{18} = -8$$

- a. -152
- b. -147
- c. -137
- d. -153
- e. -144

ANS: E PTS: 1

9. Use a property of equality to solve the equation.

$$115y = 23$$

- a. $\frac{1}{5}$
- b. $-\frac{1}{13}$
- c. $\frac{1}{13}$
- d. $-\frac{1}{5}$
- e. -5

ANS: A PTS: 1

10. Use a property of equality to solve the equation.

$$0.25x = 1,197$$

- a. 4,788
- b. 3,864
- c. 3,486
- d. 4,221
- e. 4,899

ANS: A PTS: 1

11. Use a property of equality to solve the equation.

$$\frac{P}{0.6} = 12$$

- a. 7.2
- b. 4.5
- c. 3.8
- d. 6
- e. none of these

ANS: A PTS: 1

12. What number is 35% of 700?

- a. 250
- b. 243
- c. 238
- d. 245
- e. 253

ANS: D PTS: 1

13. 928 is 145% of what number?

- a. 679
- b. 666
- c. 627

- d. 640
- e. 645

ANS: D PTS: 1

14. What percent of 2,300 is 2,070?

- a. 80%
- b. 16%
- c. 40%
- d. 35%
- e. 90%

ANS: E PTS: 1

15. Use an equation to solve the problem.

A sport jacket that sells for \$180 has a markup of \$95. Find the wholesale price.

- a. \$95
- b. \$105
- c. \$90
- d. \$100
- e. \$85

ANS: E PTS: 1

16. The amount A in an account is given by the formula $A = p + i$ where p is the principal and i is the interest.

How much interest was earned if an original deposit (the principal) of \$4,650 has grown to be \$4,940?

- a. \$285
- b. \$290
- c. \$280
- d. \$310
- e. \$275

ANS: B PTS: 1

17. The cost of an item is given by the formula $c = p + t$ where p is the price and t is the sales tax.

Find the tax paid on an item that was priced at \$37.40 and cost \$39.65.

- a. \$2.30
- b. \$2.25
- c. \$2.10
- d. \$2.35
- e. \$2.05

ANS: B PTS: 1

18. Use an equation to solve the problem.

One-fifth of the movie audience left the theater in disgust. If 72 angry patrons walked out, how many were there originally?

- a. 360
- b. 387
- c. 319
- d. 348
- e. 395

ANS: A PTS: 1

19. Use an equation to solve the problem.

Sales tax on a \$15 compact disc is \$0.60. At what rate is sales tax computed?

- a. 4%
- b. 6%
- c. 9%
- d. 5%
- e. 3%

ANS: A PTS: 1

20. Use an equation to solve the problem.

The average price of homes in one neighborhood decreased 4% since last year, a drop of \$3,900. What was the average price of a home last year?

- a. \$97,500
- b. \$101,500
- c. \$100,500
- d. \$95,500
- e. \$96,500

ANS: A PTS: 1

21. Use a property of equality to solve the equation.

$$s + 7.56 = 10.41$$

- a. 4.2
- b. 3.9
- c. 2.85
- d. 13.26
- e. -4.71

ANS: C PTS: 1

22. Use a property of equality to solve the equation.

$$\frac{t}{13} = \frac{1}{15}$$

- a. $-\frac{15}{13}$
- b. $\frac{13}{15}$
- c. $\frac{15}{13}$
- d. $-\frac{13}{15}$
- e. none of these

ANS: B PTS: 1

23. Use a property of equality to solve the equation.

$$\frac{a}{22} = \frac{1}{23}$$

- a. $\frac{22}{23}$
- b. $\frac{23}{22}$
- c. $\frac{25}{26}$
- d. $\frac{20}{21}$

ANS: A PTS: 1

MULTIPLE RESPONSE

1. Which of the following statements are equations?

- a. $y + x + 3$
- b. $y - 7 = x - 1$
- c. $y = x - 1$
- d. $y > x + 3$
- e. $y - 7 - x - 1$

ANS: B, C PTS: 1

NUMERIC RESPONSE

1. Use a property of equality to solve the equation.

$$1 = y - 7$$

$$y = \underline{\hspace{2cm}}$$

ANS: 8

PTS: 1

2. Use a property of equality to solve the equation.

$$-25 + a = -25$$

$$a = \underline{\hspace{2cm}}$$

ANS: 0

PTS: 1

3. Use a property of equality to solve the equation.

$$\frac{2}{3} = -\frac{16}{3} + x$$

$$x = \underline{\hspace{2cm}}$$

ANS: 6

PTS: 1

4. Use a property of equality to solve the equation.

$$\frac{y}{9} = 19$$

$$y = \underline{\hspace{2cm}}$$

ANS: 171

PTS: 1

5. Use a property of equality to solve the equation.

$$0.125x = 1,220$$

$$x = \underline{\hspace{2cm}}$$

ANS: 9,760

PTS: 1

6. Use a property of equality to solve the equation.

$$\frac{p}{0.8} = 15$$

$$p = \underline{\hspace{2cm}}$$

ANS: 12

PTS: 1

7. What number is 10% of 2,700?

ANS: 270

PTS: 1

8. 744 is 120% of what number?

ANS: 620

PTS: 1

9. What percent of 1,600 is 1,120?

_____ %

ANS: 70

PTS: 1

10. Use an equation to solve the problem.

A sport jacket that sells for \$175 has a markup of \$100. Find the wholesale price.

\$ _____

ANS: 75

PTS: 1

11. The amount A in an account is given by the formula $A = p + i$ where p is the principal and i is the interest.

How much interest was earned if an original deposit (the principal) of \$4,250 has grown to be \$4,530?

\$ _____

ANS: 280

PTS: 1

12. The cost of an item is given by the formula $c = p + t$ where p is the price and t is the sales tax.

Find the tax paid on an item that was priced at \$37.40 and cost \$39.69.

\$ _____

ANS: 2.29

PTS: 1

13. Use an equation to solve the problem.

One-third of the movie audience left the theater in disgust. If 71 angry patrons walked out, how many were there originally?

_____ patrons

ANS: 213

PTS: 1

14. Use an equation to solve the problem.

Sales tax on a \$9 compact disc is \$0.72. At what rate is sales tax computed?

_____ %

ANS: 8

PTS: 1

15. Use an equation to solve the problem.

The average price of homes in one neighborhood decreased 4% since last year. If the average price dropped \$3,500, what was the average price last year?

\$ _____

ANS: 87,500

PTS: 1

16. Use a property of equality to solve the equation.

$$s + 7.95 = 5.55$$

$$s = \underline{\hspace{2cm}}$$

ANS: -2.40

PTS: 1

17. Use a property of equality to solve the equation.

$$\frac{a}{68} = \frac{1}{4}$$

$$a = \underline{\hspace{2cm}}$$

ANS: 17

PTS: 1

COMPLETION

1. Answer *identical, approximate, or equivalent*.

If two equations have the same solutions, they are called _____ equations.

ANS: equivalent

PTS: 1

SHORT ANSWER

1. Tell whether the given number is a solution of the equation. Answer *yes* or *no*.

$$\frac{y}{3} = 7; y = 21$$

ANS:

yes

PTS: 1

2. Tell whether the given number is a solution of the equation. Answer *yes* or *no*.

$$5k + 7 = 7k - 1; k = 5$$

ANS:

no

PTS: 1

3. Tell whether the number is a solution of the equation. Answer *yes* or *no*.

$$\frac{4 + x}{8} - x = \frac{1}{2}; x = 0$$

ANS:

yes

PTS: 1

4. Use a property of equality to solve the equation.

$$301y = 43$$

ANS:

$$\frac{1}{7}$$

PTS: 1

5. Choose one: The statement is an equation/The statement is not an equation.

$$y + 5 = x + 2$$

ANS:

The statement is an equation.

PTS: 1

6. Use a property of equality to solve the equation.

$$\frac{t}{-13} = \frac{1}{3}$$

ANS:

$$-\frac{13}{3}$$

PTS: 1