Translate using numbers and symbols.
1. Sixteen plus nine

Subtract and check
2.  
\[
5615 \\
-3263
\]

Use the Distributive Property to simplify.
3.  
\[4(6n + 4)\]

4.  
\[2(x + 4y + 3)\]

Multiply.
5.  
\[
\begin{array}{c}
78,039 \\
x \ 3
\end{array}
\]

6.  
\[
\begin{array}{c}
692 \\
x \ 31
\end{array}
\]

Translate using numbers and symbols.
7. A number divided by 72

Evaluate or simplify.
8.  
\[35 + 42 ÷ 7 + 4 \cdot 8\]

Decide whether the given number is a solution of the equation.
9.  
\[p - 2 = 7 ; 9\]

Solve the problem by estimating.
10. As part of her preparation for softball tryouts, Eunice did 72 push-ups each day for 79 days. Estimate how many push-ups she did during that period. Round the number of push-ups and the number of days to the nearest ten.

Solve the problem.
11. The temperature at 3 p.m. on January 31 was -5º Fahrenheit. By 11 p.m. the temperature had risen 9 degrees. Find the temperature at 11 p.m.

Multiply.
12.  
\[-2 \cdot (-15)\]

Simplify.
13.  
\[|10 -18| \cdot -20 ÷ (-4)\]

14. How many total yards were lost in those plays which resulted in a loss? Label your answer with “yards lost.”

Simplify by combining like terms.
15.  
\[2(x + 3y -z) -2(3x - y + 3z)\]

Simplify each side of the equation, if possible. Then solve the equation.
16.  
\[10y = 3y + 4 + 6y\]

Solve and check your solution.
17.  
\[9b = -135\]

Answer the question.
18. How many squares with 2-inch sides can be placed in a space that is 16 square inches?

Simplify.
19.  
\[-2x^3 y)(3x^2 y^6)(0)\]

Answer the question.
20. Determine if 435 is divisible by 2, 3, 5.

Find the equivalent fraction with the given denominator.
21.  
\[
\frac{1}{5} = \frac{?}{35y}
\]

Write the ratio as a fraction in simplest form.
22.  
\[110 \text{ cents to } 120 \text{ cents}\]
Use the equality test for fractions to determine if the fractions are equal.
23. \( \frac{3}{7} = \frac{18}{42} \)

Divide. Be sure your answer is simplified.
24. \( \frac{6x}{19} \div \frac{5}{14x} \)

Answer the question.
25. List the first four multiples of 5 and of 2

Multiply or divide and simplify your answer.
26. \( \frac{2}{5} \div 7 \)

Solve the problem.
27. Find the perimeter of the square.

Solve and check your answers.
28. \( \frac{1}{14} x = 0 \)

Perform the indicated operations.
29. \( (4a^2 + 8a^3) + (3a^4 + 6a^3) \)

Multiply.
30. \(-2x(8x - 7)\)

Translate the English sentence into an equation using the variables indicated.
31. The temperature on Friday showed a decrease of 10 degrees compared to temperature two days before on Wednesday. Use \( f \) for the number of degrees on Friday and \( w \) for the number of degrees on Wednesday.

Factor. Check by multiplying.
32. \( 54x^4y + 3xy^6 \)

Solve and check your answer.
33. \( 9x = -36 \)

Solve.
34. \( 8x + 4 = 60 \)

Solve for the variable.
35. \( 2(2z - 4) = 3(z + 5) \)

Solve and check your solution.
36. \( \frac{1}{4} x - \frac{1}{4} = -6 \)

Solve.
37. Two angles are complementary if their sum is 90º. If the measure of the first angle is \( x \)º, and the measure of the second angle is \( (3x - 2) \)º, find the measure of each angle.

Evaluate the given expression using the given values of the variables.
38. \( y - x + z; x = 3.6, y = 5, z = 0.59 \)

Multiply.
39. \( 0.03 \cdot 0.09 \)

State using percent.
40. \( \frac{42}{3} \)

Translate to an equation and solve.
41. What is 80% of 15?

Solve.
42. Ming got a 14% raise in her salary from last year. This year she is earning $127,680. How much did she make last year.

Find the indicated angle.
43. Find the complement of 85º.

Find the measure of the unknown angles.
44. Figures are not down to scale.

Find the measure of \( \angle Z \).
45. \[ m \parallel n \]

Find the measure of \( \angle h \).

Find the square root.

46. \[ \sqrt{\frac{225}{529}} \]

Find the missing length or lengths in the right triangle. If necessary, round to the nearest tenth.

47. \[
\begin{array}{c}
9 \text{ km} \\
12 \text{ km}
\end{array}
\]

Find the area. Use 3.14 for \( \pi \). Round results to two decimal places.

48. A circle with radius 3.5 ft.

Find the volume. Round to the nearest tenth if necessary.

49. A cone with height 10 in. and radius 3 in.

Solve the problem.

50. A paperweight is in the shape of a square-based pyramid 9 centimeters tall. If an edge of the base is 8 centimeters, find the volume of the pyramid

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**Answers**

1. 16 + 9
2. 2352
3. 24n + 16
4. 2x + 8y + 6
5. 234,117
6. 21,452
7. \[
\frac{x}{72}
\]
8. 73
9. Yes, it is a solution
10. 5600
11. 4°
12. 30
13. 40
14. 35 yards lost
15. -4x + 8y - 8z
16. 4
17. -15
18. 4
19. 0
20. 3, 5 only
21. \[
\frac{7y}{35y}
\]
22. \[
\frac{11}{12}
\]
23. yes
\[
\frac{84x^2}{95}
\]

24. \[
\frac{15}{23}
\]

25. 5, 10, 15, 20; 2, 4, 6, 8

26. \[
\frac{2}{5}
\]

27. \[
P = 26\frac{4}{5}\text{ in.}
\]

28. \[
x = 0
\]

29. \[
7a^4 + 14a^3
\]

30. \[
-16x^2 + 14x
\]

31. \[
f = w - 10
\]

32. \[
6xy(9x^3 + 5y^5)
\]

33. \[
x = -4
\]

34. \[
x = 7
\]

35. \[
x = 23
\]

36. \[
x = -23
\]

37. 1st angle: 23°, 2nd angle: 67°

38. 1.99

39. 0.0027

40. \[
\frac{466}{3}\%
\]

41. \[
n = 0.8 \times 15; n = 12
\]

42. $112,000

43. 5°

44. 79°

45. 151°