



Translate the Algebraic Expressions.

1. X increased by 19.
2. The difference between a number and 17.
3. The product of n , r and 21.
4. 14 divided by the sum of x and y .
5. The difference between x and -15.
6. 12 plus a squared.
7. Twice the quantity of x plus 7.
8. $\frac{1}{2}$ plus the quantity of n and 20.
9. 2 times the quantity of $x + y$ to the fourth power.
10. 7 minus a number plus y squared.
11. The quotient of x cubed divided by 25.
12. The square of the quantity n squared minus 80.
13. Twice the quantity of a number squared.
14. One-third the quantity t minus 90.
15. The opposite of a number squared plus 3.

Order of Operations

Simplify the following:

16. $7 + 3 * 8 =$

21. $(7 + 3) \div (5 - 3) =$

17. $-2 + 5 * 4 =$

22. $40 \div 8 - 2 + 2 =$

18. $9 + 10 \div 2 =$

23. $(20 + 8) \div (-10 \div 5) =$

19. $-20 + 8 \div 4 =$

24. $30 \div 3 + 2 * (-4) + 14 \div 2 =$

20. $(5 - 2) * (4 + 10) =$

25. $[(4 - 5)(5 + 2)] * (7 - 3) * 4 \div 2 =$

Evaluate the Expressions.

26. $x + 19$ for $x = -20$

30. $-[(2x + 5) + x^2]$ for $x = 3$

27. $-n^2$ for $n = 7$

31. $b^3 + 40 - 15$ for $b = 9$

28. $4(y - 27)$ for $y = 10$

32. $\frac{3a^2}{a}$ for $a = 10$

29. $-8 - (10 - 15z)$ for $z = 5$

33. $\frac{x^2 + x + 15}{-x + 2}$ for $x = -10$

34. $|r + 7|$ for $r = -14$

38. $(y + z)(y - z)$ for $y = -15, z = 8$

35. $n - |n|$ for $n = -20$

39. $-4x^2 \div y^3$ for $x = 5, y = 2$

36. $y - [-x - (y + 15)]$ for $x = 18, y = -9$

40. $\frac{n^2}{3} + t$ for $n = -3, t = 12$

37. $-r - [s + (r + s)]$ for $r = 4, s = 5$

Exponents

Simplify the following:

41. $y(y)$

44. $7 \cdot r \cdot r \cdot 5 \cdot s \cdot s$

42. $n \cdot n \cdot n \cdot n$

45. $(p)(p)(p)(5)(4)$

43. $y \cdot y \cdot z \cdot z \cdot y$

Tell whether the given number is a solution to the equation: True or False.

46. $-2(n - 20) = 5n - 100; 10$

49. $r^2 - r + 50 = 20; 5$

47. $10(x + 10) = 10x + 100; 2$

50. $|y| = -25; -25$

48. $-|5n| = -20; 4$

Answer Key

1. X increased by 19. $x + 19$
2. The difference between a number and 17. $y - 17$
3. The product of n, r and 21. $nr * 21$
4. 14 divided by the sum of x and y. $14 \div (x + y)$
5. The difference between x and -15. $x - (-15)$
6. 12 plus a squared. $12 + y^2$
7. Twice the quantity of x plus 7. $2(x + 7)$
8. $\frac{1}{2}$ plus the quantity of n and 20. $\frac{1}{2} + (20n)$
9. 2 times the quantity of x + y to the fourth power. $2(x + y)^4$
10. 7 minus a number plus y squared. $7 - (n + y)^2$
11. The quotient of x cubed divided by 25. $\frac{x^3}{25}$
12. The square of the quantity n squared minus 80. $(n^2 - 80)^2$
13. Twice the quantity of a number squared. $2(x^2)$
14. One-third the quantity t minus 90. $\frac{1}{3}(t - 90)$
15. The opposite of a number squared plus 3. $-x^2 + 3$

Simplify the following:

16. $7 + 3 * 8 = 31$

17. $-2 + 5 * 4 = 18$

18. $9 + 10 \div 2 = 14$

19. $-20 + 8 \div 4 = -18$

20. $(5 - 2) * (4 + 10) = 42$

21. $(7 + 3) \div (5 - 3) = 5$

22. $40 \div 8 - 2 + 2 = 5$

23. $(20 + 8) \div (-10 \div 5) = -14$

24. $30 \div 3 + 2 * (-4) + 14 \div 2 = 9$

25. $[(4 - 5)(5 + 2)] * (7 - 3) * 4 \div 2 = -56$

Evaluate the Expressions.

26. $x + 19$ for $x = -20$

-1

27. $-n^2$ for $n = 7$

-49

28. $4(y - 27)$ for $y = 10$

-68

29. $-8 - (10 - 15z)$ for $z = 5$

57

30. $-[(2x + 5) + x^2]$ for $x = 3$

-20

31. $b^3 + 40 - 15$ for $b = 9$

754

32. $\frac{3a^2}{a}$ for $a = 10$

30

33. $\frac{x^2 + x + 15}{-x + 2}$ for $x = -10$

117

34. $|r + 7|$ for $r = -14$
7

38. $(y + z)(y - z)$ for $y = -15, z = 8$
161

35. $n - |n|$ for $n = -20$
-40

39. $-4x^2 \div y^3$ for $x = 5, y = 2$
 $-\frac{25}{2}$

36. $y - [-x - (y + 15)]$ for $x = 18, y = -9$
15

40. $\frac{n^2}{3} + t$ for $n = -3, t = 12$
15

37. $-r - [s + (r + s)]$ for $r = 4, s = 5$
-18

Simplify the following:

41. $y(y)$ **y^2**

44. $7 \cdot r \cdot r \cdot 5 \cdot s \cdot s$ **$35r^2s^2$**

42. $n \cdot n \cdot n \cdot n$ **n^4**

45. $(p)(p)(p)(5)(4)$ **$20p^3$**

43. $y \cdot y \cdot z \cdot z \cdot y$ **y^3z^2**

Tell whether the given number is a solution to the equation: True or False.

46. $-2(n - 20) = 5n - 100; 10$ **False**

49. $r^2 - r + 50 = 20; 5$ **False**

47. $10(x + 10) = 10x + 100; 2$ **True**

50. $|y| = -25; -25$ **False**

48. $-|5n| = -20; 4$ **True**