Simplify, Evaluate, and Solve

Evaluate.

1. $-3+6^{2}÷2-12$ 2. $-15÷3+2(7-10)^{2}$ 3. $3∙2+16÷4$

4. $10÷\left(3+2\right)+6$ 5. $[10+(5^{2}∙2)÷5]$ 6. $\frac{20+4}{4+3^{2}-1}$

7. $11-24(8-5)÷2^{2}$ 8. $6÷\left[4-\left(6-8\right)\right]+3^{3}$ 9. $18÷2-4^{2}-(-4)^{2}$

Evaluate the expressions for the given values.

10. 12x – 21 when x = 3 11. x2 – 11x + 40y – 14 when x = 5 and y = -2

Simplify the expressions.

12. 3(x-2) – 4(4 + x) 13. 5x2 – 3x + 8x – 6 – 7x2 14. $2\sqrt{3}+5\sqrt{2}- \sqrt{3 }+\sqrt{2}$

15. 2(x + 4) – 2x 16. 8x – 3(x – 1) 17. -3(a + 4) + 5(a – 2)

18. 0.04x + 0.75x + 2(0.03x – 1) 19. $\frac{1}{2}\left(x- \frac{2}{3}\right)+ \frac{2}{3}x$ 20. (x – 2)(x + x2 + 3x3)

Find each sum or difference.

21. (5y2 – 6y + 2) + (4y2 – 3) 22. (6x2 + 6x – 3) – (2x2 – 2x + 4) 23. (3m2 – 7m + 15) – (4m2 + 6m – 3)

24. (9n2 – 13) + (-8 + n2) 25. (-0.5 – 2.2x) – (-6.9x + 8.7) 26. $\left(\frac{1}{2}x^{2}-\frac{2}{3}\right)+(-\frac{1}{4}x^{2}+2x)$

27. What is the difference between simplify, evaluate and solve?

28. What are like terms?

29. What does it mean to solve an equation? Explain what the value represents.

30. Does every equation have an answer?

Solve.

31. 12x + 21 = 9x 32. -2x = 16x – 9 33. 18x = 9 + 18x

34. 6 –(-5b) = 5b – 3 35. 3 – (x – 4) = 7 – x 36. 20 – 8x = 4x – 4

37. 3(4 + 4x)= 12x + 12 38. 8(4x + 7) = 3(-5x – 1) 39. 4x – 3 = 15 + 2(7x + 6)

40. 8c – 4(-5c – 2) = 12c 41. 8(4x + 7) = 2(6 – 16x) 42. ¾(24 – 8a) = 2(5a + 1)

43. ½(12n – 4) = 14 – 10n 44. $\frac{-2}{3}x=4(\frac{1}{3}x+1)$ 45. –(8n – 2) = 3 + 10(1 – 3n)

46. 2(x + 1) ≥ -2 47. $\frac{1}{5}y+12\leq 8$ 48. -3(x – 5)< 2x – 5

49. -2x – 5 > 13 50. What is the difference between an equation and an inequality?