

1. Evaluate $19 + (-16) - 8 - (-15) + 7$
2. Simplify $(7 - 5)[8 - (7 + 6)]$
3. Simplify $-10(8x + 4) + 5(4x + 4)$
4. Simplify $-(-4x + 9y - 8z)$
5. Simplify $8(7x + 4y + 8)$
6. Simplify $6 + (-10x) + 4x - 3$
7. Write this phrase in mathematical symbols: **The difference between six times a number and five.**
8. Evaluate the polynomial $-3x^3 - 6x^2 + 21$ for $x = -3$
9. $\left(5x^2 - 7x + \frac{1}{2}\right) + \left(-4x^2 + 2x + \frac{3}{4}\right)$
10. Simplify: $(-19a^5 + 19a^3) - (-10a^5 - 2a^3)$
11. $y^{-7} \cdot y^{-2}$
12. Simplify $\frac{2 \times 10^{-9}}{8 \times 10^{-1}}$ and put the result in scientific notation.
13. Solve: $-3w + 4 = -4(2 + w) + 8w$
14. Solve: $\frac{2}{5}x - \frac{1}{3}x = 2$
15. Solve for C: $F = \frac{9}{5}C + 32$
16. Solve the inequality: $-4(2y - 8) < -12y + 12$

17. Multiply and simplify: $(2p - 1)(4p^2 + 2p + 1)$
18. Multiply and simplify: $(5x - 10)(2x - 8)$
19. Multiply and simplify: $(4x - 9)(4x - 9)$
20. Multiply and simplify: $(3a - 10)^2$
21. Divide: $(6x^{10} + 18x^6) \div (3x^2)$
22. Divide: $\frac{x^2 - 9x + 5}{x - 7}$
23. Factor completely: $8a^3 - 12a^2b + 6ab^2 - 9b^3$
24. Factor completely: $15x^2 + 4x - 4$
25. Factor completely: $25x^2 - 36$
26. Factor completely: $9x^2 + 16$
27. Factor completely: $16y^4 - 81$
28. Multiply and simplify: $\frac{k^2 + 10k + 16}{k^2 + 11k + 18} \cdot \frac{k^2 + 9k}{k^2 + 17k + 72}$
29. Add and simplify: $\frac{2}{y^2 - 3y + 2} + \frac{7}{y^2 - 1}$
30. Subtract and simplify: $\frac{6}{8x - 2} - \frac{4}{2 - 8x}$
31. Simplify: $\frac{\frac{y}{7}}{\frac{3}{y + 8}}$
32. Solve the equation $1 + \frac{1}{x} = \frac{56}{x^2}$

33. Find the slope and y-intercept of the line with equation $-2x + 3y = 9$
34. Write the equation of the line that passes through $(2, 5)$ and has slope, $m = -\frac{5}{6}$.
35. Find the slope of the line that passes through $(-3, -1)$ and $(-2, 1)$.
36. Find the x-intercept and the y-intercept for the line with equation $-2x + 4y = 8$
37. Determine whether the pair of lines is *parallel*, *perpendicular*, or *neither*.
 $3x - 2y = 4$
 $2x + 3y = 4$
38. Simplify completely: $-2\sqrt{18} - 5\sqrt{8}$
39. Use the commutative law of addition to rewrite $6a + 4b$
40. Simplify. Write the answer without any negative exponents: $\frac{x-4}{x-7}$
41. Solve this quadratic equation using the quadratic formula: $6x^2 = -12x - 5$
42. For this situation, find the ratio; simplify, if possible.
If a costume designer takes 54 hours to make 12 costumes, at what rate per hour are costumes being made?
43. Frank can sort a stack of mail in 20 minutes and James takes 60 minutes to sort a stack of mail. How long will it take the two of them sorting together?
44. The difference of twice a number and 7 less than that number is the same as the difference between 31 and the number. What is the number?
45. Jason had to take three tests in his math class. He scored 75 on the first test and 68 on the second test. What was his score on the third test if his average in the class was 75 after the third test?
46. A 24-foot wire is cut into two pieces so that the longer piece is 3 times the length of the shorter piece. Find the length of each piece.

