

1. Simplify  $(pq^3)(pq)^5$
2.  $2^6 \cdot 2^7$
3.  $\frac{24m^3p^2}{4m^9p}$
4.  $(w^3z)^4(w^5z^2)$
5. Evaluate the polynomial  $-3x^2 - 2x + 4$  for  $x = -3$ .
6. Add  $(3a^3 - 5a^2 + (9a^3 + 7a^2))$
7. Multiply  $(2x^2 - 4x + 4)(2x - 1)$
8. Multiply  $(4x - 8)(x - 4)$
9. Multiply  $(-7x^5)(5x^4)(6x^2)$
10. Multiply  $\left(x + \frac{2}{3}\right)\left(3x - \frac{2}{3}\right)$
11. Multiply  $(w - 5)^2$
12. Multiply  $(5n^4 + 8)(5n^4 - 8)$
13. Multiply  $(x^2 - 3)^2$
14. Combine like terms  $8x^2y - 4 - 6xy^2 + 9x^2y - 6$
15. An object's altitude, in meters, is given by the polynomial  $h + vt - 9.8t^2$ , where  $h$  is the height in meters from which the launch occurs,  $v$  is the initial upward speed in meters per second, and  $t$  is the number of seconds for which the object is airborne. A pebble is shot upward from the top of a building 131 meters tall. If the initial speed is 22 meters per second, how high above the ground will the pebble be after 2 seconds? Round results to the nearest tenth of a meter.
16. Divide  $\frac{4x^4 + 10x^3 + 2x^2}{x^2}$
17. Divide  $\frac{x^2 - 15x + 56}{x - 8}$
18. Divide  $(p^2 + 2p - 33) \div (p + 7)$
19. Simplify  $2(t^3)^{-2}$ . Do not use negative exponents in your answer.
20. Simplify  $(x^{-4}y^{-4})(x^8y^{-8})$ . Do not use negative exponents in your answer.
21. Simplify  $(9.3 \times 10^{-3})(7.7 \times 10^6)$ . Write the answer in scientific notation.
22. Convert  $1.862 \times 10^{-5}$  to decimal notation.
23. Subtract  $(5n^7 - 13n^4 + 9) - (-6n^4 + 7n^7 - 15)$