

1. Evaluate $5^0 + 4^1$ using rules of exponents.
- a) 4 b) 5 c) 9 d) 0
2. Simplify $x^2 \cdot x^6 + \frac{m^{12}}{m^6}$.
- a) $x^{12} + m^6$ b) $x^8 + m^6$ c) $x^8 + m^2$ d) $x^{12} + m^2$
3. Simplify $(-3m)^2 + \left(\frac{2h}{3}\right)^3$.
- a) $9m^2 + \frac{8h^3}{27}$ b) $-9m^2 + \frac{2h^3}{3}$ c) $9m^2 + \frac{2h^3}{3}$ d) $-9m^2 + \frac{8h^3}{27}$
4. Simplify $(2k^3)^4 + \left(\frac{m^4}{v^3}\right)^0$.
- a) $2k^{12} + \frac{m^4}{v^3}$ b) $2k^{12} + \frac{m}{v}$ c) $16k^{12} + \frac{m}{v}$ d) $16k^{12} + 1$
5. For the polynomial $3x^4y^3 + 9x^3y^4 - 5x^2y - 6$ identify both the coefficient and the degree of the **third term**.
- a) Its coefficient is 5, and its degree is 2. b) Its coefficient is -5, and its degree is 2.
c) Its coefficient is 5, and its degree is 3. d) Its coefficient is -5, and its degree is 3.
6. Write the polynomial $-3x^4 + 9x^2 - 2x + 8x^6$ in descending order to discover the degree of the polynomial.
- a) 6 b) 8 c) 12 d) 13
7. Simplify the polynomial $3x - 4x^2 + 2x - 8x^2$ by combining like terms.
- a) $-12x^2 + 5x$ b) $-7x^3$ c) $-12x^4 + 5x^2$ d) $-7x^6$

8. Simplify $(3y^2)(-5y^3)$.

- a) $-15y^5$ b) $-2y^5$ c) $-15y^6$ d) $-2y^6$

9. Simplify $(-4x^3y^5)^2$.

- a) $-8x^6y^{10}$ b) $16x^5y^7$ c) $-8x^5y^7$ d) $16x^6y^{10}$

10. Simplify $(4x + 2)(x - 3)$.

- a) $4x^2 - x - 6$ b) $4x^2 - 10x - 6$
c) $4x^2 - 14x - 6$ d) $4x^2 + 5x - 6$

11. Simplify $(5x^3 - 4)(5x^3 + 4)$.

- a) $25x^6 - 16$ b) $25x^6 - 40x - 16$
c) $25x^6 + 40x - 16$ d) $25x^9 - 16$

12. Simplify $(2x - 3)^2$.

- a) $4x^2 - 9$ b) $4x^2 - 12x + 9$ c) $4x^2 + 9$ d) $4x^2 - 6x + 9$

13. Simplify 2^{-4} .

- a) -8 b) -16 c) $-\frac{1}{8}$ d) $\frac{1}{16}$

14. Simplify $\left(\frac{2}{11}\right)^{-2}$.

- a) $-\frac{4}{11}$ b) $\frac{11}{2}$ c) $\frac{121}{4}$ d) $\frac{4}{22}$

15. Simplify $\left(\frac{2x}{w}\right)^{-4}$.

a) $\frac{w^4}{16x^4}$

b) $-\frac{8x^4}{w^4}$

c) $\frac{2w^4}{x^4}$

d) $\frac{2x^4}{w^4}$

16. Simplify $p^{-7} \cdot p^6$.

a) $\frac{1}{p}$

b) p^{42}

c) $\frac{1}{p^{42}}$

d) $\frac{1}{p^{13}}$

17. Simplify $m^3 \cdot m^{-3}$.

a) $\frac{1}{m^9}$

b) m^9

c) 1

d) 0

18. Simplify $h^{-8} \cdot h^{-5}$.

a) $\frac{1}{h^3}$

b) h^{40}

c) $\frac{1}{h^{40}}$

d) $\frac{1}{h^{13}}$

19. Simplify $\frac{x^{-8}}{x^{-4}}$.

a) $\frac{1}{x^4}$

b) x^2

c) $\frac{1}{x^2}$

d) x^4

20. Simplify $\frac{y}{y^{-5}}$.

a) $-\frac{1}{5}$

b) y^6

c) y^5

d) $\frac{1}{y^6}$

21. Simplify $(m^7)^{-1}$.

a) $\frac{1}{m^7}$

b) m^7

c) $-\frac{1}{m^7}$

d) $-m^7$

22. Rewrite 5,090,000 into proper scientific notation.

- a) 5.09×10^{-4} b) 5.09×10^{-6} c) 5.09×10^4 d) 5.09×10^6

23. Rewrite 0.00913 into proper scientific notation.

- a) 9.13×10^{-3} b) 9.13×10^{-5} c) 9.13×10^3 d) 9.13×10^5

24. Expand 7.41×10^3 to its natural form.

- a) 741,000 b) 7,410 c) 0.000741 d) 0.00741

25. Expand 2.83×10^{-4} to its natural form.

- a) 28,300 b) 0.0283 c) 0.000283 d) 2,830,000

Show your work.

26. Add or subtract these polynomials, as indicated.

- a) $(5x^2 - 3x) + (x - 2x^2)$ b) $(9x + 6x^3 - 4) - (6 - 2x - 5x^3)$

27. Simplify $-8x^2(x - 5 + 2x^2)$ and write the result in descending order.

28. Find the product. Combine like terms, and write the answer in descending order.

$$(x^2 - 3)(2x + 3 - x^2)$$

Answers

1	b	11	a	21	a
2	b	12	b	22	d
3	a	13	d	23	a
4	d	14	c	24	b
5	d	15	a	25	c
6	a	16	a		
7	a	17	c		
8	a	18	d		
9	d	19	a		
10	b	20	b		

26. (a) $3x^2 - 2x$

(b) $11x^3 + 11x - 10$

27. $-16x^4 - 8x^3 + 40x^2$

28. $-x^4 + 2x^3 + 6x^2 - 6x - 9$