

5-1

Skills Practice

Monomials

Simplify. Assume that no variable equals 0.

1. $b^4 \cdot b^3$

b^7

2. $c^5 \cdot c^2 \cdot c^2$

c^9

3. $a^{-4} \cdot a^{-3}$

$a^{-7} = \frac{1}{a^7}$

4. $x^5 \cdot x^{-4} \cdot x$

x^2

5. $(g^4)^2$

g^8

6. $(3u)^3$

$27u^3$

7. $(-x)^4$

$+x^4$

8. $-5(2z)^3$

$-40z^3$

9. $-(-3d)^4$

$-81d^4$

10. $(-2t^2)^3$

$-8t^6$

11. $(-r^7)^3$

$-r^{21}$

12. $\frac{s^{15}}{s^{12}}$

s^3

13. $\frac{k^9}{k^{10}}$

$\frac{1}{k}$

14. $(-3f^3g)^3$

$-27f^9g^3$

15. $(2x)^2(4y)^2$

$64x^2y^2$

16. $-2gh(g^3h^5)$

$-2g^4h^6$

17. $10x^2y^3(10xy^8)$

$100x^3y^{11}$

18. $\frac{24wz^7}{3w^3z^5}$

$\frac{8z^2}{w^2}$

19. $\frac{-6a^4bc^8}{36a^7b^2c}$

$-\frac{c^7}{6a^3b}$

20. $\frac{-10pq^4r}{-5p^3q^2r}$

$\frac{2q^2}{p^2}$

Express each number in scientific notation.

21. 53,000

5.3×10^4

22. 0.000248

2.48×10^{-4}

23. 410,100,000

4.101×10^8

24. 0.00000805

8.05×10^{-6}

Evaluate. Express the result in scientific notation.

25. $(4 \times 10^3)(1.6 \times 10^{-6})$

6.4×10^{-3}

26. $\frac{9.6 \times 10^7}{1.5 \times 10^{-3}}$

6.4×10^{10}