

Practice

Student Edition
Pages 254-260

Monomials

Simplify. Assume that no variable equals 0.

1. $3n^2v^3 - n^2v^3 + 8v^3n^2$ **$10n^2v^3$**

2. $4r^6w^2 + 9r^2w^6 - r^6w^2$ **$3r^6w^2 + 9r^2w^6$**

3. $y^7 \cdot y^3 \cdot y^2$ **y^{12}**

4. $(n^6)^3$ **n^{18}**

5. $(2n)^4 + 2n^4$ **$18n^4$**

6. $\frac{12m^8y^6}{-9my^4}$ **$\frac{4m^7y^2}{-3}$**

7. $(4a^3c^2)^3(-3ac^4)^2$ **$576a^{11}c^{14}$**

8. $\left(\frac{3}{2}e^2f^4\right)^4\left(-\frac{4}{3}e^5f\right)^3\left(-\frac{1}{6}ef^5\right)$ **$2e^{24}f^{24}$**

9. $-5v^2(2r^3v^2)(rv^3) - (-r^2)(16r^2v^7)$
 $6r^4v^7$

10. $(-n)^4(2xy^2n)^3 + (4xy^3n^2)^2(-3xn^3)$
 $-40x^3y^6n^7$

11. $\frac{(3x^{-2}y^3)(5xy^{-8})}{(x^{-3})^4y^{-2}}$ **$\frac{15x^{11}}{y^3}$**

12. $(m^4n^6)^4(m^3n^2p^5)^6$ **$m^{34}n^{36}p^{30}$**

13. $(3x^2y)(2xy^4) + (4xy^2)(3x^2y^3)$
 $18x^3y^5$

14. $t^{-5}(t^2 - t^4 + 5t)$ **$\frac{1}{t^3} - \frac{1}{t} + \frac{5}{t^4}$**

15. $\frac{-20(m^2v)(-v)^3}{5(-v)^2(-m^4)}$ **$-\frac{4v^2}{m^2}$**

16. $\frac{x^{7y+1}}{x^{7y-5}}$ **x^6**

Evaluate. Express each answer in both scientific and decimal notation.

17. $(4.8 \times 10^2)(6.9 \times 10^4)$
 3.312×10^7 ; 33,120,000

18. $(3.7 \times 10^9)(8.7 \times 10^2)$
 3.219×10^{12} ; 3,219,000,000,000

19. $\frac{4 \times 10^8}{1.6 \times 10^4}$
 2.5×10^4 ; 25,000

20. $\frac{2.7 \times 10^6}{9 \times 10^{10}}$
 3×10^{-5} ; 0.00003