

Independent Practice

In Exercises 9–41, simplify, if possible. 23. $(-3xy)^6$ or $729x^6y^6$

9. $4^2 \cdot 4^3$ **4⁵ or 1024**

12. $10^2 \cdot 10^9$ **10¹¹**

15. $[(2x + 3)^3]^2$ **$(2x + 3)^6$**

18. $[(5 + x)^3]^6$ **$(5 + x)^{18}$**

21. $(4a)^2 \cdot a$ **$16a^3$**

24. $(x \cdot x^2)^3 \cdot 3x$ **$3x^{10}$**

27. $2x^3 \cdot (3x)^2$ **$18x^5$**

30. $(-rs)(rs^3)^2$ **$-r^3s^7$**

33. $(4a^2)^3(\frac{1}{2}a^3)^2$ **$16a^{12}$**

36. $(-y)^4(-y)^3(-y)^2$ **$-y^9$**

39. $(abc^2)^3(a^2b)^2$ **$a^7b^5c^6$**

10. $6^5 \cdot 6^4$ **6^9 or 10,077,696**

13. $x \cdot x^5$ **x^6**

16. $(2x)^3$ **$8x^3$**

19. $(-5a)^2$ **$25a^2$**

22. $6^2 \cdot (6x^3)^2$ **6^4x^6 or 1296x⁶**

25. $(3a)^2 \cdot (-4a)^4$

28. $3y^2 \cdot (2y)^3$ **$24y^5$**

31. $(-2xy)^3(-x^2)$ **$8x^5y^3$**

34. $(8b^3)^2(\frac{1}{4}b^2)^2$ **$4b^{10}$**

37. $(2t)^3(-t^2)$ **$-8t^5$**

40. $(r^2st^3)^2(s^4t)^3$ **$r^4s^{14}t^9$**

25. $3^2(-4)^4a^6$ or **$2304a^6$**

$(-9)^8$ or 43,046,721

11. $[(-9)^2]^4$

14. $(5^5)^4$ **5^{20}**

17. $(3 \cdot 7)^4$ **21^4 or 194,481**

20. $(16 \cdot 2)^2$ **32^2 or 1024**

23. $[(-3xy)^2]^3$

26. $(9a^3)^2 \cdot (2a)^3$

29. $(-ab)(a^2b)^2$ **$-a^5b^3$**

32. $(-3cd)^3(-d^2)$ **$27c^3d^5$**

35. $(-x)^5(-x)^2(-x)^3$ **x^{10}**

38. $(-w^3)(3w^2)^2$ **$-9w^7$**

41. $(-3xy^2)^3(-2x^2y)^2$
 $-108x^7y^8$