

## Simplifying Rational Expressions—Practice

Simplify:

- |                                     |   |                                       |           |
|-------------------------------------|---|---------------------------------------|-----------|
| 1. $\frac{8x^2}{12x^4}$             | 2. $\frac{24x^2y}{32xy^3}$                | 3. $\frac{(x+1)^3}{(x+1)^5}$          | 1. _____  |
|                                     |   |                                       | 2. _____  |
|                                     |   |                                       | 3. _____  |
| 4. $\frac{(3x-2)^6}{(3x-2)^4}$      | 5. $\frac{2n-3}{3-2n}$                    | 6. $\frac{15y^2(y+3)}{20y^3(y+3)}$    | 4. _____  |
|                                     |   |                                       | 5. _____  |
|                                     |   |                                       | 6. _____  |
| 7. $\frac{15y(y+1)}{45y^2(y+1)}$    | 8. $\frac{24x^3(4-x)}{18x(4-x)}$          | 9. $\frac{6x^3(2-x)}{12x(2-x)}$       | 7. _____  |
|                                     |   |                                       | 8. _____  |
|                                     |   |                                       | 9. _____  |
| 10. $\frac{12x^3(5-2x)}{18x(2x-5)}$ | 11. $\frac{a^2+6a}{ac+6c}$                | 12. $\frac{x^2+4x}{3x+12}$            | 10. _____ |
|                                     |   |                                       | 11. _____ |
|                                     |   |                                       | 12. _____ |
| 13. $\frac{6-8x}{4x^2-3x}$          | 14. $\frac{x^2+2x-15}{x^2-10x+21}$        | 15. $\frac{x^2-2x-3}{x^2-5x-6}$       | 13. _____ |
|                                     |   |                                       | 14. _____ |
|                                     |   |                                       | 15. _____ |
| 16. $\frac{x^2-7x+12}{x^2-x-12}$    | 17. $\frac{x^2-3x-10}{x^2-6x+5}$          | 18. $\frac{x^2-8x+16}{x^2-9x+20}$     | 16. _____ |
|                                     |   |                                       | 17. _____ |
|                                     |   |                                       | 18. _____ |
| 19. $\frac{x^2-7x+10}{x^2-4x-5}$    | 20. $\frac{x^2+6x+9}{x^2+2x-3}$           | 21. $\frac{x^2-2x-24}{16-x^2}$        | 19. _____ |
|                                     |   |                                       | 20. _____ |
|                                     |   |                                       | 21. _____ |
| 22. $\frac{9-y^2}{y^2+2y-15}$       | 23. $\frac{3x^3+18x^2-21x}{x^3+5x^2-14x}$ | 24. $\frac{2x^2-18x}{4x^3-32x^2-36x}$ | 22. _____ |
|                                     |   |                                       | 23. _____ |
|                                     |   |                                       | 24. _____ |
| 25. $\frac{5x^2-11x+2}{5x^2-7x-6}$  | 26. $\frac{2x^2-7x+3}{2x^2+9x-5}$         | 27. $\frac{x^2+2x-24}{12-4x-x^2}$     | 25. _____ |
|                                     |   |                                       | 26. _____ |
|                                     |   |                                       | 27. _____ |
| 28. $\frac{2x^2-8}{x^2+4x-12}$      | 29. $\frac{2x^2-9x+7}{x^2+2x-3}$          | 30. $\frac{8x^2-14x+6}{4x-3}$         | 28. _____ |
|                                     |   |                                       | 29. _____ |
|                                     |   |                                       | 30. _____ |

### Simplifying Rational Expressions—Answer Key

1.  $\frac{2}{3x^2}$

2.  $\frac{3x}{4y^2}$

3.  $\frac{1}{(x+1)^2}$

4.  $(3x-2)^2$

5.  $-1$

6.  $\frac{3}{4y}$

7.  $\frac{1}{3y}$

8.  $\frac{4x^2}{3}$

9.  $\frac{x^2}{2}$

10.  $-\frac{2x^2}{3}$

11.  $\frac{a}{c}$

12.  $\frac{x}{3}$

13.  $-\frac{2}{x}$

14.  $\frac{x+5}{x-7}$

15.  $\frac{x-3}{x-6}$

16.  $\frac{x-3}{x+3}$

17.  $\frac{x+2}{x-1}$

18.  $\frac{x-4}{x-5}$

19.  $\frac{x-2}{x+1}$

20.  $\frac{x+3}{x-1}$

21.  $\frac{x-6}{4-x}$

22.  $\frac{-1(y+3)}{y+5}$

23.  $\frac{3(x-1)}{x-2}$

24.  $\frac{1}{2(x+1)}$

25.  $\frac{5x-1}{5x+3}$

26.  $\frac{x-3}{x+5}$

27.  $\frac{x-4}{2-x}$

28.  $\frac{2(x+2)}{x+6}$

29.  $\frac{2x-7}{x+3}$

30.  $2(x-1)$