Name

12-8B Lesson Master

Questions on SPUR Objectives
See pages 773–775 for objectives.

SKILLS Objective D

In 1 and 2, *multiple choice*. Which is *not* a rational expression?

1. A $\sqrt{x-3}$ B $\frac{a^2-36}{a+1}$ C $\frac{7x^2}{12w}$ D $\frac{4x-7}{7x+4}$ _____

2. A $\frac{5x}{x^2-6}$ B $\frac{4}{x}$ C $\frac{5c}{d^3e^5}$ D $\frac{x^2}{4\sqrt{x}}$ _____

In 3–10, simplify the rational expression and indicate all restrictions on values of the variables.

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

4. $\frac{2r^2-3r-5}{r^2-1}$

5. $\frac{8y^2-10y-3}{8y^2-14y+3}$

6. $\frac{1-z}{3z^2-z-2}$

7. $\frac{g^2-2g}{g^3-16g}$

8. $\frac{2a-6}{a^2-a-6}$

9. $\frac{3q+6r}{q}$

10. $\frac{8x^3+4x^2-60x}{12x^4-66x^3+90x^2}$

In 11 and 12, *true or false*.

11. $\frac{3q+6r}{q} = 3+6r$

12. $\frac{x-1}{x^2-1} = x+1$

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SKILLS Objective D

In 13 and 14, an expression is given.

a. **What is the common denominator?**

b. **Write as a single rational expression and indicate all restrictions on values of the variable.**

13. $\frac{2}{v-2} + \frac{3}{v+3}$

a. _____

b. _____

_____

14. $\frac{4}{x^2-1} + \frac{2}{x+1}$

a. _____

b. _____

_____

In 15–22, write as a single rational expression and indicate all restrictions on values of the variable.

15. $\frac{2}{x-8} + \frac{x}{x-8}$

_____

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

_____

17. $\frac{4}{r+2} - \frac{3r}{r-1}$

_____

18. $\frac{9}{2d-10} + \frac{3d}{d^2-25}$

_____

19. $\frac{2y}{y^2+5y+6} + \frac{6}{y^2+2y-3}$

_____

20. $\frac{1}{x} + \frac{2}{x+1} + \frac{3}{x+2}$

_____

21. $\frac{4c+1}{(c-1)^2} - \frac{3c+2}{c^2+c-2}$

_____

22. $\frac{2w}{w^2+4} + \frac{3w}{w+2}$

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