

NAME _____

DATE _____

Module 15 Simplifying Rational Expressions
Lesson 1 Finding Restricted Values of Rational Expressions

independent practice

State the restricted values of the following rational expressions.

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|-------------------------------------|---|
| 1. $\frac{2+x}{5}$ _____ | 2. $\frac{3}{x}$ _____ |
| 3. $\frac{6x}{x+1}$ _____ | 4. $\frac{c+1}{c-5}$ _____ |
| 5. $\frac{4y-3}{4y+3}$ _____ | 6. $\frac{4z-6}{7}$ _____ |
| 7. $\frac{2x+3}{5x+15}$ _____ | 8. $\frac{r+2}{r^2+4r}$ _____ |
| 9. $\frac{2}{x^2-16}$ _____ | 10. $\frac{4m-1}{2m^2-12m}$ _____ |
| 11. $\frac{c-4}{c^2-64}$ _____ | 12. $\frac{x+3}{x^2+9x+18}$ _____ |
| 13. $\frac{2q+1}{8q^2-72}$ _____ | 14. $\frac{x-7}{x^2+8x+16}$ _____ |
| 15. $\frac{x+5}{x^2+7x+10}$ _____ | 16. $\frac{t+2}{t^3+5t^2+6t}$ _____ |
| 17. $\frac{h-4}{4h^2-24h+36}$ _____ | 18. $\frac{g^2+4g-5}{4g^4-16g^2}$ _____ |
| 19. $\frac{2x-3}{2x^2-x-15}$ _____ | 20. $\frac{h-4}{h^2-2h}$ _____ |

Journal

- Martha does not understand why the denominator of a rational expression cannot have a value of zero. Explain to her why the expression $\frac{2}{0}$ is undefined.
- Explain why -3 is excluded from the domain of the expression $\frac{2x}{x+3}$.
- Explain how one would find the restricted values of $\frac{3x+1}{x^2-8x+12}$.
- Jolie says that -2 and 4 are the restricted values for a certain rational expression. Find an expression that has these restricted values.
- Find the value of the expression $\frac{6x}{x-2}$ when x is equal to zero. Is zero a restricted value? Explain.

Cumulative Review

Factor completely.

1. $5x + 10y + 25z$ _____

2. $4m^2z + 12mz^2 - 18m^2$ _____

3. $r^2 - 5r - 36$ _____

4. $t^2 - 100$ _____

5. $4u^2 - 25$ _____

6. $z^2 + 8z - 48$ _____

7. $4x^2 + 28x + 48$ _____

8. $3x^3 + 6x^2 - 105x$ _____

9. $8s^2 + 2s - 3$ _____

10. $5b^2 - 17b - 12$ _____

