



4-3 Additional Practice

Multiplying and Dividing Rational Expressions

Write an equivalent expression. Specify the domain.

1. $\frac{4x+6}{2x+3}$

2. $\frac{3x^2-12}{x^2-x-6}$

3. $\frac{x^2+13x+40}{x^2-2x-35}$

What is the simplified form of each rational expression? Specify the domain.

4. $\frac{2x^2+11x+5}{3x^2+17x+10}$

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

6. $\frac{x^2+3x-18}{x^2-36}$

Find the product and the domain.

7. $\frac{5a}{5a+5} \cdot (10a+10)$

8. $\frac{x^2-5x}{x^2-3x} \cdot \frac{x+3}{x-5}$

9. $\frac{5y-20}{3y+15} \cdot \frac{7y+35}{10y+40}$

Find the quotient and the domain.

10. $\frac{7x^4}{24y^5} \div \frac{21x}{12y^4}$

11. $\frac{y^2-49}{(y-7)^2} \div \frac{5y+35}{y^2-7y}$

12. $\frac{y^2-5y+4}{y^2-1} \div \frac{y^2-9}{y^2+5y+4}$

13. A farmer must decide whether to build a cylindrical grain silo with radius r , or a rectangular grain silo with width r and length $2r$. Both silos have the same height h . Which has the greater ratio of volume to surface area? Explain.

14. How do you know what values to exclude from the domain?