

Unit 5 review

For each rational function, identify any holes or horizontal or vertical asymptotes of its graph.

1. $y = \frac{2x^3}{x-2}$

2. $y = \frac{-3x+15}{x-5}$

3. $y = \frac{x+3}{(x+2)(x+3)}$

4. $y = \frac{2x^2+5}{x^2-4}$

Simplify each rational expression. State any restrictions on the variable.

5. $\frac{4x}{5y} \cdot \frac{10y^4}{24x^3}$

6. $\frac{3x^2+18x}{x^2+13x+42}$

7. $\frac{x^2-5x-24}{x^2-7x-30}$

8. $\frac{x^2-5x-6}{x^2-8x+12}$

9. $\frac{x^2-16}{x-9} \div \frac{x^2+14x+40}{x^2+x-90}$

10. $\frac{\frac{x+3}{x-3}}{\frac{x^2-9}{3x-9}}$

Unit 4 review

Simplify each RADICAL

1. $\sqrt{-36x^4}$

2. $\sqrt[3]{216y^3}$

3. $\sqrt[4]{81x^{12}}$

4. $\sqrt[3]{-64}$

5. $3\sqrt{32} + 2\sqrt{50}$

6. $\frac{5}{2+\sqrt{3}}$

7. $\frac{7+3i}{2+5i}$

8. $(1-\sqrt{5})(2-\sqrt{5})$

Solve each

9. $\sqrt[3]{6x-5} + 3 = -2$

10. $\sqrt{x+2} - 2 = 0$

11. $\sqrt{x+1} = x+1$

12. $x^3 + 5x^2 + 9x + 45 = 0$