

Multiplying and Dividing Rational Functions

Find the function $f(x)$ in the simplest form

$$\textcircled{1} f(x) = \frac{7x^2}{12x} \div \frac{14x^3}{48y^3}$$

$$\textcircled{2} \frac{24x^3}{50x} \cdot \frac{30}{8x^2}$$

$$\textcircled{3} f(x) = \frac{2x^2y}{y^2z} \cdot \frac{y}{x}$$

$$\textcircled{4} f(x) = \frac{y^2 - 2y - 15}{4} \cdot \frac{8}{y + 3}$$

$$\textcircled{5} f(x) = \frac{x^2 - 2x}{6} \div \frac{3x - 6}{x}$$

$$\textcircled{6} \frac{24x^3}{25y^5} \cdot \frac{15y^2}{8x^2}$$

$$\textcircled{7} f(x) = \frac{6x - 18}{4x} \cdot \frac{x}{2x - 6}$$

$$\textcircled{8} f(x) = \frac{x^2 - x - 12}{4x + 12} \div \frac{x^2 - 6x + 8}{6}$$

Multiplying and Dividing Rational Functions

Answers

$$\textcircled{1} f(x) = \frac{7x^2}{12x} \div \frac{14x^3}{48y^3}$$

$$\textcircled{2} \frac{24x^3}{50x} \cdot \frac{30}{8x^2}$$

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

$$\frac{9x}{5}$$

$$\textcircled{3} f(x) = \frac{2x^2y}{y^2z} \cdot \frac{y}{x}$$

$$\textcircled{4} f(x) = \frac{y^2 - 2y - 15}{4} \cdot \frac{8}{y + 3}$$

$$\frac{2x}{z}$$

$$2(y - 5)$$

$$\textcircled{5} f(x) = \frac{x^2 - 2x}{6} \div \frac{3x - 6}{x}$$

$$\textcircled{6} \frac{24x^3}{25y^5} \cdot \frac{15y^2}{8x^2}$$

$$\frac{x^2}{18}$$

$$\frac{9x}{5y^3}$$

$$\textcircled{7} f(x) = \frac{6x - 18}{4x} \cdot \frac{x}{2x - 6}$$

$$\textcircled{8} f(x) = \frac{x^2 - x - 12}{4x + 12} \div \frac{x^2 - 6x + 8}{6}$$

$$\frac{3}{4}$$

$$\frac{3}{2(x - 2)}$$