Dividing Rational Expressions

MATH MONKS

Simplify the following

(1) $\frac{4x}{x + 7} \div \frac{2x}{x^2 + 7x}$

(2) $\frac{x^2 + 2x}{x + 1} \div \frac{x^2 - 1}{x^2 + x^3}$

(3) $\frac{x + 2}{x - 4} \div \frac{1}{3x - 12}$

(4) $\frac{x + 7}{x^2 - 9} \div \frac{x^2 + 9x + 14}{3x^2 - 9x}$

(5) $\frac{x + 2}{x + 8} \div \frac{x + 4}{x - 2}$

(6) $\frac{5x^3}{4x + 12} \div \frac{2x^3 + 3x^2}{x^3 - 9x}$

(7) $\frac{x - 2}{x + 1} \div \frac{3 - 12x}{2x^2 - x - 3}$

(8) $\frac{x}{2x + 4} \div \frac{3x^2 + 7x + 2}{9x + 3}$

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Answers

(1) $\frac{4x}{x+7} \div \frac{2x}{x^2+7x}$

$\frac{2x}{}$

(2) $\frac{x^2+2x}{x+1} \div \frac{x^2-1}{x^2+x^3}$

$\frac{x^3(x+2)}{(x-1)(x+1)}$

(3) $\frac{x+2}{x-4} \div \frac{1}{3x-12}$

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

(4) $\frac{x+7}{x^2-9} \div \frac{x^2+9x+14}{3x^2-9x}$

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

(5) $\frac{x+2}{x+8} \div \frac{x+4}{x-2}$

$\frac{(x-2)(x+2)}{(x+4)(x+8)}$

(6) $\frac{5x^3}{4x+12} \div \frac{2x^3+3x^2}{x^3-9x}$

$\frac{5x^2(x-3)}{4(2x+3)}$

(7) $\frac{x-2}{x+1} \div \frac{3-12x}{2x^2-x-3}$

$\frac{(x-2)(2x-3)}{(-3)(4x-1)}$

(8) $\frac{x}{2x+4} \div \frac{3x^2+7x+2}{9x+3}$

$\frac{3x}{2(x+2)^2}$