

Multiply & Divide Rational Expressions

1. Write each rational expression as an equivalent rational expression in lowest terms.

$$\text{a) } \left(\frac{a^3 b^2}{c^2 d^2} \cdot \frac{c}{ab} \right) \div \frac{a}{c^2 d^3}$$

$$\text{b) } \frac{a^2 + 6a + 9}{a^2 - 9} \cdot \frac{3a - 9}{a + 3}$$

$$\text{c) } \frac{6x}{4x - 1} \div \frac{4x}{x^2 - 16}$$

$$\text{d) } \frac{3x^2 - 6x}{3x + 1} \cdot \frac{x + 3x^2}{x^2 - 4x + 4}$$

$$\text{e) } \frac{2x^2 - 10x + 12}{x^2 - 4} \cdot \frac{2 + x}{3 - x}$$

$$\text{f) } \frac{a - 2b}{a + 2b} \div (4b^2 - a^2)$$

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$abcd$

$$\text{b) } \frac{a^2 + 6a + 9}{a^2 - 9} \cdot \frac{3a - 9}{a + 3}$$

3

$$\text{c) } \frac{6x}{4x - 16} \div \frac{4x}{x^2 - 16}$$

$\frac{3(x + 4)}{8}$

$$\text{d) } \frac{3x^2 - 6x}{3x + 1} \cdot \frac{x + 3x^2}{x^2 - 4x + 4}$$

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

$$\text{e) } \frac{2x^2 - 10x + 12}{x^2 - 4} \cdot \frac{2 + x}{3 - x}$$

-2

$$\text{f) } \frac{a - 2b}{a + 2b} \div (4b^2 - a^2)$$

$-\frac{1}{(a + 2b)^2}$

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