

## Extra Practice Multiplying and Dividing Rational Expressions

MCR3U

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1) Multiply the following rational expressions. Simplify and state restrictions.

a)  $\frac{x+4}{x} \cdot \frac{x^2}{x^2+5x+4}$

b)  $\frac{x^2+10x+16}{5x-10} \cdot \frac{x-2}{x^2+9x+8}$

c)  $\frac{2x^2-10x}{x^2-9x+20} \cdot \frac{x^2-8x+16}{4x^2}$

d)  $\frac{2x+4}{x+4} \cdot \frac{5x^2+21x+4}{10x+2}$

2) Divide the following rational expressions. Simplify and state restrictions.

a)  $\frac{x^2-5x+6}{5} \div \frac{x-3}{15}$

b)  $\frac{x^2-5x+6}{8x^2+24x} \div \frac{x-2}{4x+12}$

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

d)  $\frac{x^2+7x+12}{x^2+3x-10} \div \frac{x^2-x-20}{x^2-25}$

### Answers

1) a)  $\frac{x}{x+1}$ ;  $x \neq -4, -1, 0$    b)  $\frac{x+2}{5(x+1)}$ ;  $x \neq -8, -1, 2$    c)  $\frac{x-4}{2x}$ ;  $x \neq 0, 4, 5$    d)  $x + 2$ ;  $x \neq -4, -\frac{1}{5}$

2) a)  $3x - 6$ ;  $x \neq 3$    b)  $\frac{x-3}{2x}$ ;  $x \neq -3, 0, 2$    c)  $\frac{x-1}{x+1}$ ;  $x \neq -1, 1$    d)  $\frac{x+3}{x-2}$ ;  $x \neq -5, -4, 2, 5$