

Multiply & Divide Rational Expressions Day Two

Directions: Simplify!

$$1) \frac{x^2+6x-40}{x^2+6x+9} * \frac{x^2-9}{2x^2-28x+80}$$

$$\frac{(x+10)(x-3)}{2(x-10)(x+3)}$$

$$2) \frac{15x^2-19x-8}{9x^2-1} * \frac{x+1}{5x^3+8x^2+5x+8}$$

$$\frac{(5x-8)(x+1)}{(3x-1)(x^2+1)(5x+8)}$$

$$3) \frac{6x^3y^2}{5xy^4} * \frac{xy^3}{8}$$

$$\frac{3x^3y}{20}$$

$$4) \frac{9x^2-x}{2x^3-6x^2-8x} \div \frac{18x^2-29x+3}{x^2-16x+48}$$

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

$$5) \frac{8x^4-8}{5x^3+5x} \div \frac{2x^2-12x-14}{10x^2-70x}$$

$$8(x-1)$$

$$6) \frac{(x+8)^4}{(x-6)^3} \div \frac{x^2-64}{(x-6)^5}$$

$$\frac{(x+8)^3(x-6)^2}{x-8}$$

$$7) \frac{x^2+x-2}{x^2-x-6} * \frac{x^2+x-12}{x+4} * \frac{x+5}{x^2-x-30}$$

$$\frac{x-1}{x-6}$$

$$8) \frac{\frac{x^2+15x+56}{x-1}}{\frac{x+7}{x^2+7x-8}}$$

$$(x+8)^2$$

(Remember: Order of Operations follows a Left to Right Rule).

$$9) \frac{x+1}{x-4} * \frac{x-4}{x^2+8x+12} \div \frac{x+1}{x^2+2x-24}$$

$$\frac{x-4}{x+2}$$

$$10) \frac{8x^2-800}{2x^2-13x-70} \div \frac{x^3+10x^2+7x+70}{x-3} * \frac{2x^3+7x^2+14x+49}{8x-24}$$

$$\frac{x^2+7}{x+7}$$