$$\frac{a}{b} \cdot \frac{c}{d} = \frac{ac}{bd}$$

Multiply and Divide Rational Expressions

$2xy^2$

$\frac{8x^4}{4x} \cdot \frac{4y^2}{8x^3}$

$\frac{12x^2y^3}{6xy}$

$2xy^2$

$\frac{2x^3y}{3z^4} \cdot \frac{6xz^5}{10y^5}$

$\frac{12x^4yz^5}{30y^5z^4}$

$\frac{2x^4z}{5y^4}$

$\frac{2x^2y}{3z^3} \cdot \frac{12xz^4}{6y^3}$

$\frac{24x^3yz^4}{18y^3z^3}$

$\frac{4x^3z}{3y^2}$

$\frac{x^2-16}{x^2} \cdot \frac{x^2-4x}{x^2-x-12}$

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

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

$\frac{a^2-10a+21}{a-7} \cdot \frac{a^2+a-12}{(a-3)^2}$

$\frac{(a-7)(a-3)}{a-7} \cdot \frac{(a-5)(a+4)}{(a-5)(a-5)}$

$a+4$

$\frac{y^2+10y+25}{y^2-9} \cdot \frac{y^2+3y}{y+5}$

$\frac{(y+5)(y+5)}{(y-3)(y+5)} \cdot \frac{y(y+3)}{y+5}$

$\frac{y(y+5)}{y-3}$

$\frac{6x+18}{x^2+5x+4} \cdot \frac{x^2-x-2}{x^2+4x+3}$

$\frac{6(x+3)}{(x+4)(x+1)} \cdot \frac{(x-2)(x+1)}{(x+3)(x+1)}$

$\frac{6(x-2)}{(x+4)(x+1)}$

$\frac{6x-24}{x^2-9x+20} \cdot \frac{5x-25}{3x-6}$

$\frac{2\,6(x-4)}{(x-4)(x-5)} \cdot \frac{5(x-5)}{3(x-2)}$

$\frac{30}{3(x-2)}$

$\frac{10}{x-2}$

$\frac{6x+30}{x^2-7x+10} \cdot \frac{7x-14}{3x-6}$

$\frac{2\,6(x+5)}{(x-5)(x-2)} \cdot \frac{7(x-2)}{3(x-2)}$

$\frac{14(x+5)}{(x-5)(x-2)}$

$$\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \cdot \frac{d}{c}$$

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$\frac{16a^7}{3b^5} \div \frac{8a^3}{6b}$

$\frac{16a^7}{3b^5} \cdot \frac{6b}{8a^3}$

$\frac{96a^7b}{24a^3b^5}$

$\frac{4a^4}{b^4}$

$\frac{3y+15}{y^7} \div \frac{y+5}{y^2}$

$\frac{3y+15}{y^7} \cdot \frac{y^2}{y+5}$

$\frac{3(y+5)}{y^7} \cdot \frac{y^2}{y+5}$

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

$\frac{y^2-9}{y^2} \div \frac{y^5+3y^4}{y+2}$

$\frac{(y+3)(y-3)}{y^2} \cdot \frac{y+2}{y^4(y+3)}$

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

$\frac{y^3+3y}{y^2-9} \div \frac{y^2+5y-14}{y^2+4y-21}$

$\frac{y(y^2+3)}{(y-3)(y+3)} \div \frac{(y+7)(y-2)}{(y+7)(y-3)}$

$\frac{y(y^2+3)}{(y+3)(y-3)} \cdot \frac{(y+7)(y-3)}{(y+7)(y-2)}$

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

$y^2+3 \neq (y+3)^2$

$\frac{x^2-16}{x^2-10x+25} \div \frac{3x-12}{x^2-3x-10}$

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

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

$\frac{x^2-7x-8}{2x+6} \div \frac{x^2-3x-4}{4x+12}$

$\frac{(x-8)(x+1)}{2(x+3)} \cdot \frac{4(x+3)}{(x-4)(x+1)}$

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

$\frac{4y+12}{2y-10} \div \frac{y^2-9}{y^2-y-20}$

$\frac{2\cdot 2(y+3)}{2(y-5)} \cdot \frac{(y+4)(y-5)}{(y-3)(y+3)}$

$\frac{2(y+4)}{y-3}$

$\frac{2m^2-5m-12}{m^2-10m+24} \div \frac{4m^2-9}{m^2-m+18}$

$\frac{2m^2-5m-12}{m^2-10m+24} \cdot \frac{m^2-m+18}{4m^2-9}$

$\frac{(2m+3)(m-4)}{(m-6)(m-4)} \cdot \frac{m^2-m+18}{(2m-3)(2m+3)}$

$\frac{m^2-m+18}{(m-6)(2m-3)}$

5