

Below are the problems assigned for homework. Review them for tomorrow's quiz. Happy practicing!

Simplify each expression.

$$1) \frac{5}{5} \cdot \frac{4}{4y^2} - \frac{4x}{5} \cdot \frac{4y^2}{4^2} = \frac{20}{20y^2} - \frac{16xy^2}{20y^2}$$

$$\text{LCD: } 20y^2 = \frac{20 - 16xy^2}{20y^2} = \frac{5 - 4xy^2}{5y^2}$$

$$3) \frac{x}{x} \cdot \frac{2x}{5} - \frac{2x}{5x} = \frac{2x^2 - 2x}{5x} = \frac{x(2x - 2)}{5x} = 2x - 2$$

$$\frac{5}{3} + \frac{4}{v+2} = \frac{5(v+2) + 12}{3(v+2)} = \frac{5v + 22}{3(v+2)}$$

$$\frac{6}{b-1} + \frac{b+2}{5b+4} = \frac{6(5b+4) + (b+2)(b-1)}{(b-1)(5b+4)} = \frac{30b+24 + b^2+b-2}{(b-1)(5b+4)} = \frac{b^2+31b+22}{(b-1)(5b+4)}$$

$$\frac{5}{x^2+2x-8} - \frac{3}{2x} = \frac{5}{(x+4)(x-2)} - \frac{3}{2x} = \frac{5 \cdot 2x - 3(x+4)(x-2)}{2x(x+4)(x-2)} = \frac{10x - 3(x^2+6x-24)}{2x(x+4)(x-2)} = \frac{-3x^2+11x-24}{2x(x+4)(x-2)}$$

$$11) \frac{5(m+2)}{(m+2)(m-4)} + \frac{5m(m-4)}{(m+2)(m-4)}$$

LCD:  $(m-4)(m+2)$

$$= \frac{5(m+2) + 5m(m-4)}{(m+2)(m-4)} = \frac{5m+10 + 5m^2-20m}{(m+2)(m-4)} = \frac{5m^2-15m+10}{(m+2)(m-4)}$$

$$13) \frac{3r}{r+5} + \frac{2}{3r^2} = \frac{5(m^2-3m+2)}{(m+2)(m-4)}$$

~~$\frac{-2}{-3}$~~

$$= \frac{5(m-2)(m-1)}{(m+2)(m-4)}$$

$$15) \frac{6b}{b+5} + \frac{b-1}{3} = \frac{18b + (b-1)(b+5)}{3(b+5)} = \frac{18b + b^2 + 4b - 5}{3(b+5)} = \frac{b^2 + 22b - 5}{3(b+5)}$$

$$17) \frac{b-6}{3b-3} + \frac{5(b-1)}{b-6} = \frac{b(b-6) + 5(b-1)}{(b-1)(b-6)} = \frac{b^2-6b+5b-5}{(b-1)(b-6)} = \frac{b^2-b-5}{(b-1)(b-6)}$$

$$19) \frac{6}{k^2+2k-3} - \frac{4}{k^2+5k-6} = \frac{6(k+3) - 4(k+1)}{(k-1)(k+3)(k+6)} = \frac{6k+36-4k-12}{(k-1)(k+3)(k+6)} = \frac{2k+24}{(k-1)(k+3)(k+6)}$$