

Green Set

$$\frac{\frac{a^2 - b^2}{ab}}{\frac{a+b}{b}} \quad \frac{a-b}{a}$$

$$\frac{1 - \frac{2}{3x}}{x - \frac{4}{9x}}$$

$$\frac{3}{3x+2}$$

$$\frac{2y^{-1} + 5z^{-1}}{y^{-1} - 4z^{-1}}$$

$$\frac{2z + 5y}{z - 4y}$$

$$\frac{\frac{1}{x} + \frac{1}{y}}{x^2 - y^2}$$

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

$$\frac{a - \frac{3a}{b}}{b - \frac{b}{a}}$$

$$\frac{y^{-1} + 7}{y^{-1} - 5}$$

$$\frac{1 + 7y}{1 - 5y}$$

$$\frac{a^2(b-3)}{b^2(a-1)}$$

Blue Set

$$\frac{x^{-3} - x}{x^{-2} - 1}$$

$$\frac{1 + x^2}{x}$$

$$\frac{y^2 - y - 6}{y^2 - 5y - 14}$$

$$\frac{y^2 + 6y + 5}{y^2 - 6y - 7}$$

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

$$\frac{x^2 - x - 12}{x^2 - 2x - 15}$$

$$\frac{x^2 + 8x + 12}{x^2 - 5x - 14}$$

$$\frac{(x-4)(x-7)}{(x-5)(x+6)}$$

$$\frac{x(1-x)^{-1} + (1+x)x^{-1}}{(1-x)x^{-1} + x(1+x)^{-1}}$$

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

$$\frac{\frac{y}{x-y} + \frac{x+y}{y}}{\frac{x-y}{x} + \frac{y}{x+y}}$$

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

$$y(x-y)(x^2+xy-y^2)$$

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

$$\frac{x^2 + y^2}{xy}$$

Pink Set

$$\frac{x^{-3} + y^{-3}}{x^{-2} - x^{-1}y^{-1} + y^{-2}}$$

$$\frac{x+y}{xy}$$

$$\frac{5x^{-1} - 5y^{-1} + 10x^{-1}y^{-1}}{6y^{-1} + 12x^{-1}y^{-1}}$$

$$\frac{5(y-x-2)}{6(x+2)}$$

$$\frac{\frac{4a}{2a^2 - a - 1} - \frac{4}{a - 1}}{\frac{1}{a - 1} + \frac{2}{2a + 1}}$$

$$\frac{-4a - 4}{8a - 5}$$

$$\frac{4a - 1}{8a - 5}$$

Find and simplify

$$\frac{f(x+h) - f(x)}{h} \quad \frac{-5}{x(x+h)}$$

for $f(x) = \frac{5}{x}$

Find and simplify

$$\frac{f(x+h) - f(x)}{h} \quad \frac{1}{(1-x-h)(1-x)}$$

for $f(x) = \frac{1}{1-x}$

Find and simplify

$$\frac{f(x+h) - f(x)}{h}$$

for $f(x) = \frac{x}{x+1}$

$$\frac{1}{(1+x)(1+x+h)}$$