

Add/Subtract/Multiply/Divide

$$1. \frac{x}{x^2+6x} - \frac{6}{x+6} \quad \boxed{\frac{-5}{x+6}}$$

$$2. \frac{x+7}{x^2+9x+14} + \frac{x-3}{x+2} \quad \boxed{\frac{x-2}{x+2}}$$

$$3. \frac{x+2}{x^2-6x-7} - \frac{2}{x-7} \quad \boxed{\frac{-x}{(x-7)(x+1)}}$$

$$4. \frac{3x-5}{2x-6} + \frac{4x-2}{5x-15} \quad \boxed{\frac{23x-29}{10(x-3)}}$$

$$5. \frac{9x+3}{x^2-11x+18} + \frac{x+3}{x-9} \quad \boxed{\frac{x^2+10x-3}{(x-2)(x-9)}}$$

$$6. \frac{36x^4}{9x^2} \cdot \frac{12x^6}{2x} \cdot \frac{5}{x^2} \quad \frac{120x^8}{x^5} = \boxed{120x^3}$$

$$7. \frac{x^2+6x}{10} \cdot \frac{4}{x^2-36} \quad \boxed{\frac{2x}{5(x-6)}}$$

$$8. \frac{x^2-9}{6} \div \frac{4x-12}{x} \quad \boxed{\frac{x(x+3)}{24}}$$

$$9. \frac{x^2+7x+10}{x^2-6x} \div \frac{x^3-4x}{x^2-8x+12} \quad \boxed{\frac{x+5}{x^2}}$$

$$10. \frac{x^2+4x+3}{x^2+6x+8} \cdot \frac{x^2+9x+18}{x^2+7x+10} \quad \boxed{\frac{(x+1)(x+5)}{(x+4)(x+6)}}$$

Solve

$$11. \frac{x+3}{2x} = \frac{5}{8} \quad \boxed{x=12}$$

$$12. \frac{x-15}{x+5} = \frac{x-12}{x} \quad \boxed{x = \frac{15}{2}}$$



13.  $\frac{x}{x-2} - \frac{x-5}{5} = \frac{x-2}{5}$

$X = 1, 7$

14.  $\frac{3}{x-2} + \frac{5}{x+2} = \frac{4x^2}{x^2-4}$

$X = 1$

15.  $\frac{x}{x-4} \leq 0$

$[0, 4)$

16.  $\frac{3x-6}{x-5} > 2$

$(-\infty, -4) \cup (5, \infty)$

17.  $\frac{5}{x+3} \leq 0$

$(-\infty, -3)$

18. Bob and Bill work at an auto detailing business that cleans automobiles. Bob can completely detail a car in 3 hours. Bob and Bill together can detail a car in 1 hour. How long does it take for Bill to detail a car on his own?

$$\frac{1}{3}(1) + \frac{1}{x}(1) = 1$$

$$x + 3 = 3x$$

$$3 = 2x$$

$1.5 = x$   
hrs

