P.4 (a)

Example: Solve: $\left(\frac{x}{3}-\frac{2x}{5}=\frac{1}{6}\right)\frac{30}{1}$

mult. by LCD / 1

$\frac{30x}{3}-\frac{60x}{5}=\frac{30}{6}$

$10x-12x=5$

$-2x=5$

$\boxed{x=-\frac{5}{2}}$

Example: Solve: $\dfrac{x}{(x-1)} = \dfrac{1}{(x-1)} - \dfrac{1}{(x-3)}$

LCD: $\dfrac{(x-1)(x-3)}{1}$ $\left[\dfrac{x}{(x-1)} = \dfrac{1}{(x-1)} - \dfrac{1}{(x-3)}\right]$

$x(x-3) = x-3-(x-1)$

$x^2-3x = x-3-x+1$

$x^2-3x = -2$

$x^2-3x+2=0$

$(x-1)(x-2)=0$

$x \neq 1$, $x=2$

Check answers!

Example: Find the x- and y-intercepts of

$$2x+3y=6$$

x-int: set $y=0$

$2x+3(0)=6$

$2x=6$

$x=3$

$(3,0)$

y-int: set $x=0$

$2(0)+3y=6$

$3y=6$

$y=2$

$(0,2)$

Example: Find the x- and y-intercepts of

$$y = x^2 + x - 6$$

x-int: $0 = x^2 + x - 6$

$0 = (x-2)(x+3)$

$x = 2, -3 \rightarrow$ $(2,0), (-3,0)$

y-int: $y = 0^2 + 0 - 6$

$y = -6$

$(0,-6)$

Example: Use a graphing utility to approximate the solutions of $x^3 + 4x + 1 = 0$

graph & look for x-intercept

$(-.246, 0)$