Unit 3

Wednesday, September 25, 2019 11:20 AM

1.2: Linear Equations

Ex: Solve $-2(x+5)-3 = 4x+2$

$-2x-10-3 = 4x+2$

$-2x-13 = 4x+2$

$-4x \quad\quad -4x$

$-6x-13 = 2$

$+13 \quad\quad +13$

$-6x = 15$

$\frac{-6x}{-6} = \frac{15}{-6}$

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

Solution Set: $\left\{-\frac{5}{2}\right\}$

Ex: $\frac{x-2}{3} + \frac{5x}{2} = \frac{1}{2} + 6$

Multiply both sides by 6:

$6\left(\frac{x-2}{3} + \frac{5x}{2}\right) = 6\left(\frac{1}{2} + 6\right)$

$\frac{6^2(x-2)}{3} + \frac{6^3(5x)}{2} = \frac{6}{2} + 36$

$2(x-2) + 3(5x) = 3 + 36$

$2x - 4 + 15x = 39$

$17x - 4 = 39$

$+4 \quad\quad +4$

$17x = 43$

$\frac{17x}{17} = \frac{43}{17}$

$x = \frac{43}{17}$

Soln Set: $\left\{\frac{43}{17}\right\}$

Ex: $\frac{5x}{3} = \frac{7}{8}$

multiply by 24 to get rid of fractions

$24\left(\frac{5x}{3}\right) = \frac{7}{8}(24)$

$8(5x) = 7(3)$

$40x = 21$

$\frac{40x}{40} = \frac{21}{40}$

$x = \frac{21}{40}$

Soln Set: $\left\{\frac{21}{40}\right\}$

Note:

If $\frac{a}{b} = \frac{c}{d}$,

then $ad = bc$

Sometimes this is called cross-multiplying

This is the end of Section 1.2.

Tomorrow: 1.4 and start 1.5