

January 18, 2017  
 \* Math Jam Fridays  
 starts this week  
 12:00 - 2:00  
 #320

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$$1.) \quad 3[2-5(x+1)] = -4(2x+1)$$

$$3[2-5x-5] = -8x-4$$

$$3[-3-5x] = -8x-4$$

$$-9-15x = -8x-4$$

$$\frac{-5}{7} = \frac{7x}{7}$$

$$\boxed{-\frac{5}{7} = x}$$

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$$-9-15x = -8x-4$$

$$\frac{-7x}{-7} = \frac{5}{-7}$$

$$\boxed{x = -\frac{5}{7}}$$

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$$2.) \quad \overset{12}{\uparrow} \left( \frac{x+2}{12} = \frac{5}{4} \right)$$

LCD

$$x+2 = 15$$

$$\boxed{x = 13}$$

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10.2.2b

$$3x^2 + 18x - 2 = 0$$

Divide by 3

$$\frac{3x^2}{3} + \frac{18x}{3} - \frac{2}{3} = \frac{0}{3}$$

$$x^2 + 6x - \frac{2}{3} = 0$$

Isolate Variable Term

$$x^2 + 6x + 9 = \frac{2}{3} + 9$$

$$(x+3)^2 = \frac{2}{3} + \frac{27}{3}$$

$$\sqrt{(x+3)^2} = \sqrt{\frac{29}{3}}$$

$$x+3 = \pm \sqrt{\frac{29}{3}} = \pm \frac{\sqrt{87}}{\sqrt{3}} = \pm \frac{\sqrt{87}}{3}$$

\* Rationalizing Denominator

$$x+3 = \pm \frac{\sqrt{87}}{3}$$

$$x = -3 \pm \frac{\sqrt{87}}{3}$$

$$= \frac{-9 \pm \sqrt{87}}{3}$$

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### Properties of Radicals

①  $\sqrt[n]{a \cdot b} = \sqrt[n]{a} \cdot \sqrt[n]{b}$

$$\sqrt{50} = \sqrt{25 \cdot 2} = \sqrt{25} \cdot \sqrt{2} = 5\sqrt{2}$$

②  $\sqrt[n]{\frac{a}{b}} = \frac{\sqrt[n]{a}}{\sqrt[n]{b}}$

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Method to Solve  
a Quadratic Equation

① Factoring

② Square Root Property

$$x^2 = k$$

③ Completing the Square

$$ax^2 + bx + c = 0$$

④ Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

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