

July 21, 2015

$$5x^2 - 2x + 3 = 8$$

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

$$x^2 - \frac{2}{5}x = 1$$

② $(-\frac{2}{5}) \cdot \frac{1}{2} = -\frac{2}{10} = -\frac{1}{5}$

③ $(-\frac{1}{5})^2 = \frac{1}{25}$ *add to both sides*

$$x^2 - \frac{2}{5}x + \frac{1}{25} = 1 + \frac{1}{25}$$

Use square root prop

$$\sqrt{(x - \frac{1}{5})^2} = \sqrt{\frac{26}{25}}$$

$$x - \frac{1}{5} = \pm \frac{\sqrt{26}}{5}$$

$$x = \frac{1}{5} \pm \frac{\sqrt{26}}{5}$$

$$\frac{1 \pm \sqrt{26}}{5}$$

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$$5x^2 - 2x + 3 = 8$$

$$x = \frac{1 + \sqrt{26}}{5}$$

$$5\left(\frac{1 + \sqrt{26}}{5}\right)^2 - 2\left(\frac{1 + \sqrt{26}}{5}\right) + 3 = 8$$

$$5\left[\left(\frac{1 + \sqrt{26}}{5}\right)\left(\frac{1 + \sqrt{26}}{5}\right)\right] - \frac{2 - 2\sqrt{26}}{5} + 3 = 8$$

$$5\left(\frac{1 + 2\sqrt{26} + 26}{25}\right) - \frac{2 - 2\sqrt{26}}{5} + 3 = 8$$

$$\cancel{5}\left(\frac{27 + 2\sqrt{26}}{\cancel{25}}\right) - \frac{2 - 2\sqrt{26}}{5} + 3 = 8$$

$$\frac{27 + 2\sqrt{26} - 2 + 2\sqrt{26}}{5} + 3 = 8$$

$$\frac{27 - 2}{5} + 3 = 8$$

$$\frac{25}{5} + 3 = 8$$

$$5 + 3 = 8$$

$$8 = 8 \checkmark$$

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10.2 #47) LCD: 10

$$10\left(\frac{2x^2}{9} - \frac{x}{3} = 1\right)$$

$$\frac{4x^2}{9} - \frac{5x}{9} = \frac{10}{9}$$

$$x^2 - \frac{5}{9}x = \frac{5}{9}$$

② $(-\frac{5}{9}) \cdot \frac{1}{2} = -\frac{5}{18}$

③ $(-\frac{5}{18})^2 = \frac{25}{324}$

$$x^2 - \frac{5}{9}x + \frac{25}{324} = \frac{5}{9} + \frac{25}{324}$$

$$\sqrt{\left(x - \frac{5}{18}\right)^2} = \sqrt{\frac{160 + 25}{324}} = \sqrt{\frac{185}{324}}$$

$$x - \frac{5}{18} = \pm \frac{\sqrt{185}}{18}$$

$$x = \frac{5}{18} \pm \frac{\sqrt{185}}{18}$$

$$x = \frac{5 \pm \sqrt{185}}{18}$$

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

$$\frac{ax^2 + bx}{a} = -\frac{c}{a}$$

$$x^2 + \frac{b}{a}x = -\frac{c}{a}$$

② $(\frac{b}{a}) \cdot \frac{1}{2} = \frac{b}{2a}$

③ $(\frac{b}{2a})^2 = \frac{b^2}{4a^2} = \frac{b^2}{4a^2} - \frac{c}{a}$

$$x^2 + \frac{b}{a}x + \frac{b^2}{4a^2} = \frac{b^2}{4a^2} - \frac{c}{a}$$

P.S.S

$$\left(x + \frac{b}{2a}\right)^2 = \frac{b^2 - 4ac}{4a^2}$$

$$\sqrt{\left(x + \frac{b}{2a}\right)^2} = \sqrt{\frac{b^2 - 4ac}{4a^2}}$$

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

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

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

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

Quadratic Formula

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