

$$3\left(x^2 - \frac{2}{3}\right) = 4 \quad (1)$$

$$3x^2 - 2 = 4 \quad (2)$$

$$3x^2 = 6 \quad (3)$$

isolate the term with the variable

$$x^2 = 2 \quad (4)$$

$$\sqrt{x^2} = \sqrt{2} \quad (5)$$

$$|x| = \sqrt{2} \quad (6)$$

$$x = \pm\sqrt{2} \quad (7)$$

←=====→

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This example is from MathMode.pdf of Herbert Voß

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

$$= 2 \left(\underbrace{x^2 - \frac{3}{2}x + \left(\frac{3}{4}\right)^2}_{=0} - \underbrace{\left(\frac{3}{4}\right)^2 + \frac{5}{2}} \right)$$

$$= 2 \left(\left(x - \frac{3}{4}\right)^2 + \frac{31}{16} \right)$$

$$y = 2 \left(x - \frac{3}{4} \right)^2 + \frac{31}{8}$$

$2x^2 - 3x$ is the beginning of

an algebraic identity (Simon's)

←=====→