

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

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

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

isolate the term with the variable

$$x^2 = 2 \quad \sqrt{\dots} \quad (4)$$

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

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

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