

$$\begin{array}{rcl}
 3\left(x^2 - \frac{2}{3}\right) = 4 & \xrightarrow{\quad\quad\quad} & \text{expand} \quad (1) \\
 3x^2 - 2 = 4 & \xleftarrow{\quad\quad\quad} & (2) \\
 3x^2 = 6 & \xleftarrow{\quad\quad\quad} & +2 \quad (3) \\
 & & \div 3 \\
 \text{isolate the term with the variable} & & \\
 x^2 = 2 & \xleftarrow{\quad\quad\quad} & (4) \\
 \sqrt{x^2} = \sqrt{2} & \xleftarrow{\quad\quad\quad} & \sqrt{\dots} \quad (5) \\
 |x| = \sqrt{2} & \xleftarrow{\quad\quad\quad} & \sqrt{x} = |x| \quad (6) \\
 x = \pm\sqrt{2} & \xleftarrow{\quad\quad\quad} & \text{so that} \quad (7)
 \end{array}$$

This example is from MathMode.pdf of Herbert Voß

$$\begin{array}{rcl}
 y = 2x^2 - 3x + 5 & \xrightarrow{\quad\quad\quad} & \\
 = 2\left(\overbrace{x^2 - \frac{3}{2}x + \left(\frac{3}{4}\right)^2}^{=0} - \underbrace{\left(\frac{3}{4}\right)^2 + \frac{5}{2}}_{\quad\quad\quad}\right) & \xleftarrow{\quad\quad\quad} & \begin{array}{l} 2x^2 - 3x \text{ is the beginning of} \\ \text{an algebraic identity (binomial} \\ \text{formula)} \end{array} \\
 = 2\left(\left(x - \frac{3}{4}\right)^2 + \frac{31}{16}\right) & \xleftarrow{\quad\quad\quad} & (a - b)^2 = a^2 - 2ab + b^2 \\
 y = 2\left(x - \frac{3}{4}\right)^2 + \frac{31}{8} & \xleftarrow{\quad\quad\quad} & \text{after simplification, the result is}
 \end{array}$$