



WHEN a=1

$$x^2 + bx + c$$

$$= \left(x + \frac{1}{2}b\right)^2 - \left(\frac{1}{2}b\right)^2 + c$$

Tidy up  $\left(\frac{1}{2}b\right)^2$

Combine  
 $-\left(\frac{1}{2}b\right)^2 + c$

WHEN a ≠ 1

Write  $y = \dots$

÷ all terms  
by a

Complete the sq.

× all terms  
by a

1	2	3	4	5
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Write  $4x^2 + 3x - 1$  in the form  $A(x+B)^2 + C$

$$y = 4x^2 + 3x - 1$$

$$\frac{1}{4}y = x^2 + \frac{3}{4}x - \frac{1}{4}$$

$$\frac{1}{4}y = \left(x + \frac{3}{8}\right)^2 - \left(\frac{3}{8}\right)^2 - \frac{1}{4}$$

$$\frac{1}{4}y = \left(x + \frac{3}{8}\right)^2 - \frac{9}{64} - \frac{1}{4}$$

$$\frac{1}{4}y = \left(x + \frac{3}{8}\right)^2 - \frac{25}{64}$$

$$y = 4\left(x + \frac{3}{8}\right)^2 - \frac{25}{16}$$

