

## Algebra - Completing the Square

Find  $a$  and  $b$  when

$$x^2 + 6x - 14 = (x + a)^2 + b.$$

$$a = \underline{\hspace{2cm}} \quad b = \underline{\hspace{2cm}} \quad [3]$$

For all values of  $x$ ,  $x^2 + 6x - 2 = (x + p)^2 + q$

(d) Find the value of  $p$  and the value of  $q$ .

$$p = \dots \quad q = \dots \quad (2)$$

## Algebra - Completing the Square

Find  $a$  and  $b$  when

$$\begin{aligned} & (x+a)(x+a) \\ &= x^2 + 2ax + a^2 \end{aligned}$$

$$x^2 + 6x - 14 = (x + a)^2 + b.$$

$$\begin{aligned} x^2 + 6x - 14 &= (x+3)^2 - 14 - 9 \\ &= (x+3)^2 - 23 \end{aligned}$$

$$a = \underline{\quad 3 \quad} \quad b = \underline{\quad -23 \quad} [3]$$

For all values of  $x$ ,  $x^2 + 6x - 2 = (x + p)^2 + q$

(d) Find the value of  $p$  and the value of  $q$ .

$$\begin{aligned} x^2 + 6x - 2 &= (x+3)^2 - 2 - 9 \\ &= (x+3)^2 - 11 \end{aligned}$$

$$p = \underline{\quad 3 \quad} \quad q = \underline{\quad -11 \quad} [2]$$