

When is  $x^2 + bx + C$  a PST? constant term.

$\downarrow$        $\underbrace{\quad}_{2x\sqrt{C}}$        $\downarrow$   
 $x$                                        $\sqrt{C}$

$$bx = 2x\sqrt{C}$$

$$b = 2\sqrt{C}, \quad \frac{b}{2} = \sqrt{C}, \quad \boxed{\left(\frac{b}{2}\right)^2 = C}$$

Ex 2: Provide the  $C$  value so that the trinomial becomes a PST

(a)  $x^2 + 6x + \underline{9}$

(b)  $x^2 - 16x + \underline{64}$

(c)  $x^2 + 5x + \underline{\frac{25}{4}}$

(d)  $x^2 - 11x + \underline{\frac{121}{4}}$

(e)  $x^2 + 10x + \underline{25}$   
 $b = 10, \textcircled{1} \frac{b}{2} = \frac{10}{2} = 5$

$\textcircled{2} \left(\frac{b}{2}\right)^2 = (5)^2 = 25$