



27th December

Expand and simplify fully

$$(y + 1)(y - 4)(y + 3)$$

$$(y^2 - 3y - 4)(y + 3)$$

$$y^3 + 3y^2 - 3y^2 - 9y - 4y - 12$$

$$y^3 - 13y - 12$$

Write  $4x^2 + 12x - 5$  in the form  $a(x + b)^2 + c$ 

$$4[x^2 + 3x] - 5$$

$$4\left[\left(x + \frac{3}{2}\right)^2 - \frac{9}{4}\right] - 5$$

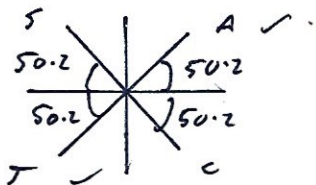
$$4\left(x + \frac{3}{2}\right)^2 - 9 - 5$$

$$4\left(x + \frac{3}{2}\right)^2 - 14$$

Solve  $\tan \theta = 1.2$  for  $0^\circ \leq \theta \leq 360^\circ$ 

$$\tan^{-1}(1.2) = 50.2$$

$$\theta = 50.2^\circ, 230.2^\circ$$

Find the coordinates where the line  $x + y = 3$  and the curve  $x^2 + 3y = 27$  intersect

$$y = 3 - x$$

$$x^2 + 3(3 - x) = 27$$

$$x^2 + 9 - 3x = 27$$

$$x^2 - 3x - 18 = 0$$

$$(x - 6)(x + 3)$$

$$x = 6 \text{ or } x = -3$$

$$(6, -3) \quad (-3, 6)$$