

$$\text{So } R = (2 + 3/5 \ln 5, 0) \quad (4)$$

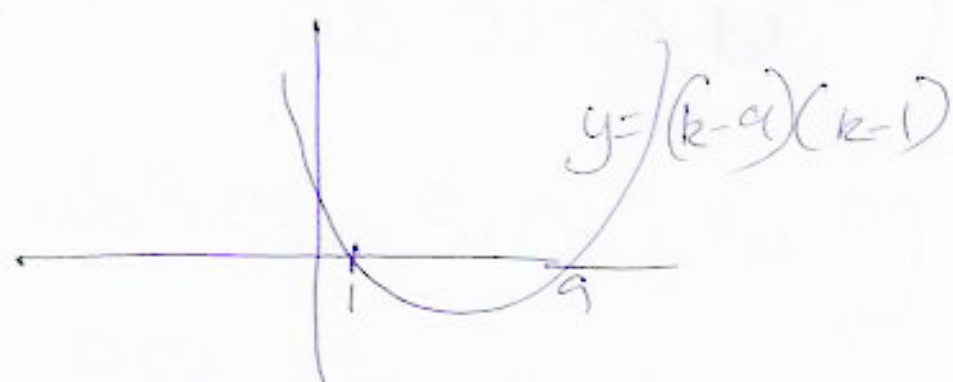
$$7) a) b^2 - 4ac = 0$$

$$(k-3)^2 - 4k = 0$$

$$k^2 - 6k + 9 - 4k = 0$$

$$k^2 - 10k + 9 = 0$$

$$b) (k-9)(k-1) = 0 \Rightarrow k = 1 \text{ or } 9$$



$$y > 0 \text{ if } k < 1 \text{ or } k > 9$$

$$8) a) \int_0^5 x(x-5)^2 dx = \int_0^5 x^3 - 10x^2 + 25x dx$$

$$= \left[\frac{x^4}{4} - \frac{10x^3}{3} + \frac{25x^2}{2} \right]_0^5$$

$$= \left[\frac{5^4}{4} - \frac{10 \times 5^3}{3} + \frac{25 \times 5^2}{2} \right] - 0$$

$$= 625/12$$

$$b) V = \pi \int y^2 dx$$