

COORDINATE GEOMETRY(II)

Form 6

Vol 5

Part 3 – Locus

7. Mid-point of $HK = \left(\frac{7-8}{2}, \frac{2+3}{2}\right) = \left(-\frac{1}{2}, \frac{5}{2}\right)$

Slope of the locus $= (-1) \div \frac{2-3}{7+8} = 15$

Equation of the locus:

$$\frac{y - \frac{5}{2}}{x + \frac{1}{2}} = 15$$

$$15x - y + 10 = 0$$

8. $(x-2)^2 + (y-4)^2 = 9$

9. Let $2x - y + a = 0$ be the equation of locus.

Mid-point of the y -intercepts of L_1 and $L_2 = \left(0, \frac{9+5}{2}\right) = (0, 7)$

$\therefore 2x - y + 7 = 0$