

2019 P2 Q2

a) $(a, 0) (0, b)$

$$m = \frac{b-0}{0-a} = \frac{b}{-a}$$

Equation : $\left. \begin{array}{l} bx + ay + k = 0 \\ ba + 0 + k = 0 \\ k = -ba \end{array} \right\} (a, 0)$

$$bx + ay - ba = 0 \quad (\div \text{ by } ab)$$

$$\boxed{\frac{x}{a} + \frac{y}{b} = 1}$$

b) $m = \frac{1}{-1}$
A $(6, 0)$

Equation : $\left. \begin{array}{l} mx - ly + k = 0 \\ 6m + k = 0 \\ k = -6m \end{array} \right\} (6, 0)$

$$l : \boxed{mx - y - 6m = 0}$$

ii) $k : 4x + 3y = 25$

$$l \cap k = P$$

$$\textcircled{3 \times l} + \textcircled{k} : \begin{array}{l} 3mx - 3y = 18m \\ 4x + 3y = 25 \end{array}$$

$$(3m+4)x = 18m+25$$

$$\boxed{x = \frac{18m+25}{3m+4}}$$

l: ~~4~~

$$m \left[\frac{18m+25}{3m+4} \right] - 6m = y$$

$$\frac{18m^2 + 25m - 6m(3m+4)}{3m+4} = y$$

$$3m+4$$

$$\frac{18m^2 + 25m - 18m^2 - 24m}{3m+4}$$

$$3m+4$$

$$\boxed{\frac{m}{3m+4} = y}$$