

(1) (a) Skets $y - 3 = 2x$

(b) Skryf die vergelyking neer van die reguit lyn wat ewewydig is aan die lyn in (a) en deur oorsprong gaan. Skets hierdie lyn op dieselfde assestelsel as die lyn in (a).

(c) Bepaal die gemeenskaplike snytpunt van die twee lyne in (a) en (b).

(a) $y = 2x + 3$

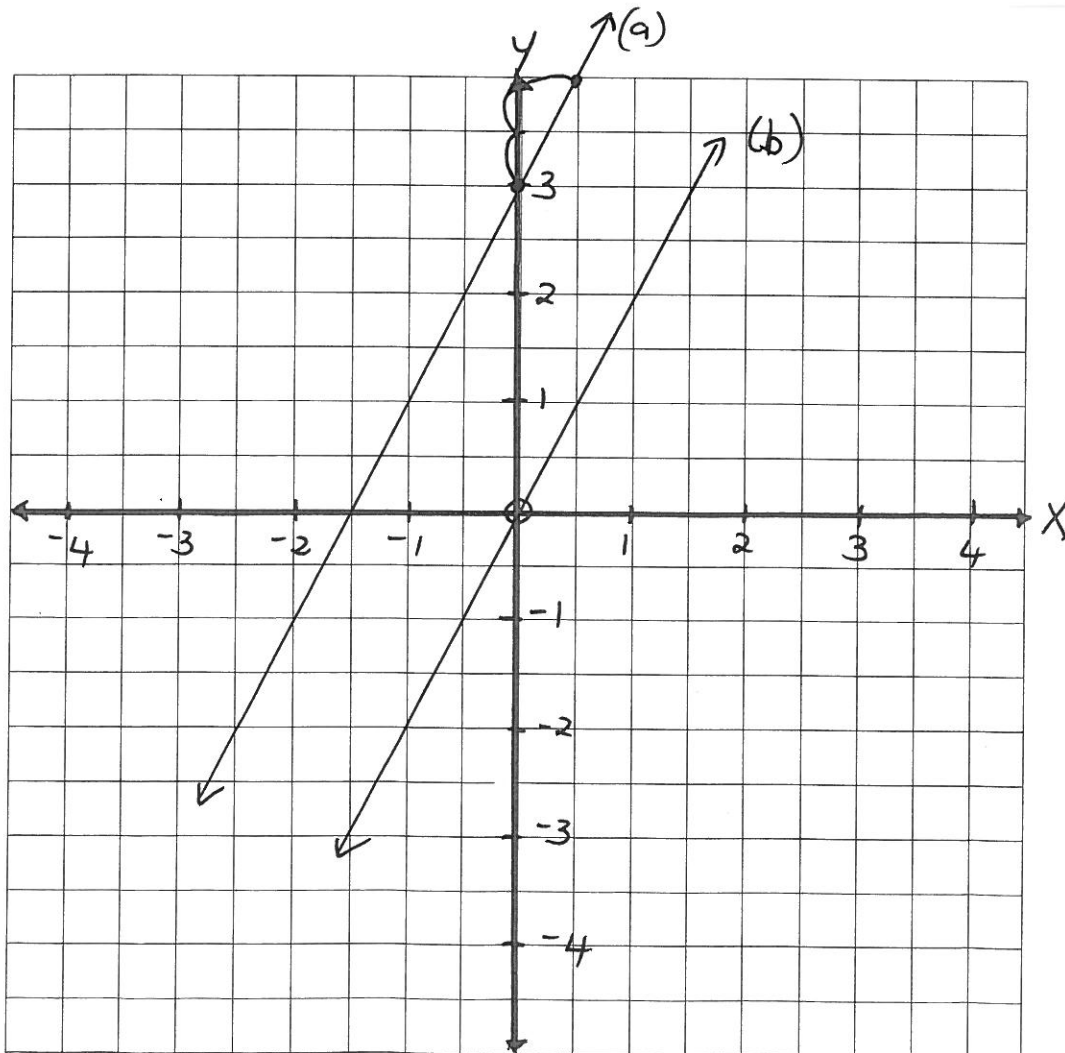
$m = \frac{+2}{+1} \rightarrow c = 3$

(b) oorsprong $\rightarrow (0; 0)$ met $m = 2$ ($\parallel$ lyne)

$\therefore y = 2x + 0$

$\therefore y = 2x$

(c) Die lyne in (a) en (b) sal geen gemeenskaplike snytpunt hê nie, aangesien die lyne ewewydig is.



(2) Bepaal of die punt $(2; -2)$ op die volgende reguit lyn lê:

(a) $y - 3x = 1$

(b) $y + 2x = 2$

$$\begin{aligned} LK &= y - 3x \\ &= -2 - 3(2) \\ &= -2 - 6 \\ &= -8 \end{aligned}$$

$$RK = 1$$

$$\therefore LK \neq RK$$

$\therefore (2; -2)$ lê nie op die lyn nie.

$$\begin{aligned} LK &= y + 2x \\ &= -2 + 2(2) \\ &= -2 + 4 \\ &= 2 \end{aligned}$$

$$RK = 2$$

$$\therefore LK = RK$$

$\therefore (2; -2)$ lê op die lyn.

(3) Bepaal of die volgende pare lyne ewewydig of loodreg is of nie:

(a) $2x - 2y = 6$ en $x - y - 2 = 0$

$$\begin{aligned} \frac{-2y}{-2} &= \frac{-2x+6}{-2} & x-2 &= y \\ & \frac{-2x+6}{-2} & \therefore y &= x-2 \end{aligned}$$

$$y = x - 3$$

$$\therefore m_1 = 1$$

$$m_2 = 1$$

$$\therefore m_1 = m_2$$

$\therefore$ Die lyne is //

(b) $\frac{2y}{3} + 1 = x$ en $x + y = 0$

$$\begin{aligned} 2y + 3 &= 3x & y &= -x \\ \frac{2y}{2} &= \frac{3x-3}{2} & y &= \frac{3}{2}x - \frac{3}{2} \end{aligned}$$

$$\therefore m_1 = \frac{3}{2}$$

$$m_2 = -1$$

$$m_1 \neq m_2 \text{ en } m_1 \times m_2 \neq -1$$

$\therefore$ Die lyne is nie // of $\perp$ nie.

(4) Bepaal die waarde van p as $2px - 5 = y$ loodreg is op $4y - 2x = 4$.

$$2px - 5 = y$$

$$\therefore y = 2px - 5$$

$$\therefore m_1 = 2p$$

$$\frac{4y}{4} = \frac{2x+4}{4}$$

$$\therefore y = \frac{1}{2}x + 1$$

$$\therefore m_2 = \frac{1}{2}$$

$$\text{Vir } \perp \text{ lyne: } m_1 \times m_2 = -1$$

$$\therefore 2p \times \frac{1}{2} = -1$$

$$\frac{2p}{2} = -1$$

$$\therefore p = -1$$