

2 equation giving us the same line

(a) $2x - y + 3 = 0$

$(k - 1)x + y - m = 0$

$K = ?$

$m = ?$

We know that $\frac{A_1}{A_2} = \frac{B_1}{B_2} = \frac{C_1}{C_2}$

$\frac{K-1}{2} = \frac{1}{-1} = \frac{-m}{3} \Rightarrow \frac{K-1}{2} = -1$

$K - 1 = -2$

$K = -1$

$\frac{-m}{3} = -1 \Rightarrow m = 3$

(b) Suppose $\alpha = 90^\circ$ between the lines

$a_1 \cdot a_2 = -1$

$y = 2x + 3 \Rightarrow$

$a_1 = 2$

$a_2 = 1 - K$

$(1 - K) \cdot 2 = -1$

$-2K = -3$

$K = \frac{3}{2}$

m Can be any number

