



1. The straight line L1 passes through the points  $(-1, 3)$  and  $(11, 12)$ .

a. Find an equation for L1 in the form  $ax + by + c = 0$ , where  $a$ ,  $b$  and  $c$  are integers.

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The line L2 has equation  $3y + 4x - 30 = 0$ .

b. Find the coordinates of the point of intersection of L1 and L2.

**(3)**

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## Solutions

1a.

Gradient = $\frac{12-3}{11--1} = \frac{9}{12} = \frac{3}{4}$	<b>M1</b>
Equation of L1: $y - 3 = \frac{3}{4}(x - 1)$	<b>M1</b>
$4y - 12 = 3x + 3$	<b>M1</b>
$3x - 4y + 15 = 0$	<b>M1</b>

1b.

L1: $3x - 4y + 15 = 0$ (x3) L2: $3y + 4x - 30 = 0$ (x4)  L1: $9x - 12y + 45 = 0$ L2: $12y + 16x - 120 = 0$	<b>M1</b>
$25x - 75 = 0$ $x = 3$	<b>M1</b>
When $x = 3$ , $3(3) - 4y + 15 = 0$ $4y = 24$ $y = 6$	<b>M1</b>

