

Straight Line – None Calculator Answers

1.

Answer	Mark	Mark scheme
$7x + 5y - 82 = 0$	P1	for process to work out the gradient of the line from the centre of the circle to the point (6,8) eg $\frac{8-3}{6--1} (= \frac{5}{7})$
	P1	(dep P1) for using $mn = -1$ eg $-1 \div \frac{5}{7} (= -\frac{7}{5})$
	P1	for substituting (6, 8) into $y = -\frac{7}{5}x + c$ or for $(y - 8) = -\frac{7}{5}(x - 6)$ or for $y = -\frac{7}{5}x + \frac{82}{5}$ oe
	A1	$7x + 5y - 82 = 0$ oe SC B2 for answer of $5x + 7y - 86 = 0$ oe in any form

2.

Answer	Mark	Mark scheme
$y = -\frac{1}{3}x + 8$	M1	for a method for finding the gradient of L_2 eg use of $-\frac{1}{m}$ or $-\frac{1}{3}$
	M1	(dep) for substitution of (9, 5) into $y = -\frac{1}{3}x + c$
	A1	for $y = -\frac{1}{3}x + 8$ oe

3.

Answer	Mark	Mark scheme
(22, 20)	P1	for process to find width or height of diagram eg $38 - 6 (= 32)$ or $36 - 7 (= 29)$
	P1	for process to find length of side of square eg " 32 " $\div 4 (= 8)$ or process to find half width of diagram eg " 32 " $\div 2 (= 16)$
	P1	for process to find x coordinate eg $6 + 2 \times "8" (= 22)$ or $6 + "16" (= 22)$ or $(6 + 38) \div 2 (= 22)$
	P1	for process to find y coordinate eg $36 - 2 \times "8" (= 20)$ or $36 - "16" (= 20)$ or $7 + "8" + "29" - 3 \times "8" (= 20)$
	A1	cao

4.

Answer	Mark	Mark scheme
$b = \frac{2}{3}a + 2$	P1	for process to rearrange the equation to give y in terms of x eg $y = \frac{7-3x}{2}$ or $y = -\frac{3}{2}x + \left(\frac{7}{2}\right)$ or $m = -\frac{3}{2}$
	P1	for using their gradient in $mn = -1$
	P1	for showing a process to find the gradient of PQ eg $\frac{b-4}{a-3}$ OR for substituting $x = 3$ and $y = 4$ in $y = \frac{2}{3}x + c$
	P1	(dep P3) for forming an equation in a and b eg $\frac{b-4}{a-3} = \frac{2}{3}$ or $b = \frac{2}{3}a + "2"$ OR correct equation in terms of x and y eg $y = \frac{2}{3}x + 2$
	A1	for $b = \frac{2}{3}a + 2$ oe

5.

$y = 2x + 36$	P1	starts process, eg by rearranging to find gradient, eg $y = 6 - \frac{x}{2}$ or $\frac{-1}{2}$ or positions of B and E
	P1	complete process to find position of A or uses $\frac{-1}{m}$ to find the gradient of M
	P1	complete process to find equation of M
	A1	$y = 2x + 36$ oe

6.

$y = -2x + 21$	P1	shows evidence of understanding that AC is perpendicular to DB , or states the gradient of DB as 0.5 oe
	P1	shows a process to find the gradient of a perp. line e.g. use of $-\frac{1}{m}$ or states $y = -2x + c$ or states the gradient of AC as -2
	P1	(dep on P2) for sub. of $x = 5, y = 11$ into $y = mx + c$ where m is their found gradient for AC .
	A1	oe

7.

comparison	M1	starts to manipulate expression e.g. $3y = 9x - 6$ or $3y = 9x - 5$
	A1	gives equation(s) which can be used to show that the gradients of the two lines are the same e.g. $y = 3x - 5/3$

8.

$y = -\frac{1}{2}x + \frac{3}{2}$	P1	for a process to find the gradient of the line AB
	P1	(dep) for a process to find the gradient of a perpendicular line eg use of $-1/m$
	P1	(dep on P2) for substitution of $x=5, y=-1$
	A1	equation stated oe

9.

$3y - 4x = 11$	P1	process to start to solve problem eg. draw a diagram, find gradient of AB (0.5)
	P1	process to use gradients eg. find gradient of BC (-2)
	P1	Process to find y coordinate of C (9)
	P1	Process to find equation of AC
	A1	