Higher 2022 Paper 1

1. $5x + 2y = 7$

$2y = -5x + 7$

$y = \frac{-5}{2}x + \frac{7}{2}$

$m = \frac{-5}{2}$

$m_{\perp} = \frac{2}{5}$

$(-1, 6)$

$y - b = m(x - a)$

$y - 6 = \frac{2}{5}(x + 1)$

$5y - 30 = 2(x + 1)$

$5y - 30 = 2x + 2$

$5y - 2x = 32$

Marking Instructions for each question

Question			Generic scheme	Illustrative scheme	Max mark
1.			$\bullet^1$ state gradient $\bullet^2$ state perpendicular gradient $\bullet^3$ find equation of line	$\bullet^1$ $-\frac{5}{2}$ $\bullet^2$ $\frac{2}{5}$ $\bullet^3$ $5y=2x+32$	3

Notes:

1. At $\bullet^1$, ignore any errors in processing the constant term.
2. At $\bullet^1$ and $\bullet^2$, ignore the appearance of 'x'.
3. $\bullet^3$ is only available as a consequence of using a perpendicular gradient.
4. At $\bullet^3$, accept any arrangement of a candidate's equation where constant terms have been simplified.

Commonly Observed Responses:

Candidate A
A perpendicular gradient has been clearly stated
$5x+2y=7$

$m_{\perp}=\frac{2}{5}$ $\bullet^1$ ✓ $\bullet^2$ ✓
$5y=2x+32$ $\bullet^3$ ✓

Candidate B
No communication for perpendicular gradient
$5x+2y=7$
$y=-\frac{5}{2}x+\frac{7}{2}$

$m=\frac{2}{5}$ $\bullet^1$ ^ $\bullet^2$ ✓ 1
$5y=2x+32$ $\bullet^3$ ✓ 1

Candidate C
$m=5$ $\bullet^1$ ✗
$m_{\perp}=-\frac{1}{5}$ $\bullet^2$ ✓ 1
$x+5y=29$ $\bullet^3$ ✓ 1