| | | | | | |
|---|---|---|---|---|---|
| **22** | $y=-\frac{7}{2}x(+10)$ **or** (gradient =) $-\frac{7}{2}$ | | 4 | B1 | for correct gradient which may be seen in an equation.<br>Condone $-\frac{7}{2}x$ |
| | $'-\frac{7}{2}'m=-1$ **or** $(m=)'\frac{2}{7}'$ | | | M1 | ft their gradient for use of $m_1 \times m_2 = -1$ |
| | $-11='\frac{2}{7}'\times 6+c$ **or** $y--11='\frac{2}{7}'(x-6)$ oe | | | M1 | ft dep on M1 |
| | | $\left(0, -\frac{89}{7}\right)$ | | A1 | accept $\left(0, -12\frac{5}{7}\right)$ must be exact values |
| | | | | | |
| | | | | | **Total 4 marks** |

| | | | | | |
|---|---|---|---|---|---|
| **23** | $\left(\frac{dy}{dx}=\right)3px^2-m$ | | 4 | M1 | for $3px^2$ **or** $-m$ |
| | $3px^2-m<0$ oe | | | M1 | ft dep on M1 for setting up an inequality with their $'3px^2'-'m'$ must be a two-term expression in the form $apx^2 \pm m$ |
| | $\pm\sqrt{\frac{m}{3p}}$ | | | B1 | for both critical values |
| | | $-\sqrt{\frac{m}{3p}} < x < \sqrt{\frac{m}{3p}}$ | | A1 | may be seen as two separate inequalities |
| | | | | | **Total 4 marks** |