

| Question | | Answer | Marks | AO | Guidance |
|----------|-----|---|---|--|--|
| 7 | (a) | $\left(\frac{dy}{dx}\right)8x-10$ At $\left(\frac{1}{2},3\right):m_T = -6 \Rightarrow m_N = \frac{1}{6}$ $y-3 = \frac{1}{6}\left(x-\frac{1}{2}\right)$ $2x-12y+35=0$ | B1 M1* M1dep* A1 [4] | 1.1 1.2 1.1 1.1 | Correct derivative Substitutes $x = 0.5$ into their two-term derivative and using product of gradients is -1 Using $y-3 = m\left(x-\frac{1}{2}\right)$ with $m \neq -6$ or their tangent gradient (so must have attempted normal gradient) Must = 0 and integer coefficients All terms on one side |
| | (b) | $x \geq 1.25$ $y \geq 4x^2 - 10x + 7$ $2x - 12y + 35 \geq 0$ | B1 B1 B1FT [3] | 1.1 2.2a 2.2a | o.e. Follow through their (a) SCB2 if all “correct” (including FT from (a)), but either all strict or a mix of strict and non-strict inequalities used $(y' = 0 \Rightarrow x = 1.25)$ |