

Core 1 Terminology

Hence	Use the previous part of the question to...
Intersection	Solve the simultaneous equations
$\frac{dy}{dx}$	Differentiate, find the gradient,
Rate of change	$\frac{dy}{dx}$, differentiate, find the gradient,
y is increasing	$\frac{dy}{dx}$ is positive, >0 .
Is a factor	Put negative x value into $f(x)$ and show no remainder
Find the remainder when	Put negative x value into $f(x)$ and find remainder
Perpendicular	$m_1 m_2 = -1$, negative reciprocal
$y = mx + c$	Straight line, $m =$ gradient $\Rightarrow \frac{dy}{dx}$
$\frac{d^2 y}{dx^2}$	Gradient of gradient
Show that the stationary point is a maximum	Put x value into $\frac{d^2 y}{dx^2}$ and show answer is negative.
Determine the nature of the stationary point	Put x value into $\frac{d^2 y}{dx^2}$ and if negative \Rightarrow maximum, if positive \Rightarrow minimum.
In the form $(x - p)^2 + q$	Complete the square

Real roots	$b^2 - 4ac \geq 0$
One root / repeated roots / equal roots / touches the y axis	$b^2 - 4ac = 0$
No roots / does not cross the y axis	$b^2 - 4ac \leq 0$
The tangent to the curve at (x,y)	Find $\frac{dy}{dx}$ at (x,y) , then use (x,y) to find c and equation for straight line.
The normal to the curve (circle)	Negative reciprocal of gradient (tangent) at specified point