

Equations of Tangents

1. Find the equation of the tangent to the curve $y = 2x^2 - 5x$ at the point $(2, -2)$.
2. Find the equation of the tangent to the curve $y = x^3 + 6$ at the point $(1, 7)$.
3. Find the equation of the tangent to the curve $y = x^3 - x^2 - 4x$ at the point $(3, 6)$.
4. A curve has equation $y = (2x + 3)^2$. Find the equation of the tangent to this curve at the point $(-1, 1)$.
5. A curve has equation $y = x\sqrt{x}$. Find the equation of the tangent to this curve at the point $(4, 8)$.
6. A curve has equation $y = x + \frac{4}{\sqrt{x}}$. Find the equation of the tangent to the curve at the point $(1, 5)$.
7. Find the equation of the tangent to the curve $y = x^3 - 6x + 1$ at the point where $x = 2$.
8. A curve has equation $y = (x - 1)(x^2 - 2x - 1)$. Find the equation of the tangent to this curve at the point where $x = 2$.
9. A curve has equation $y = \frac{x^3 + 3x^2}{x}$. Find the equation of the tangent to this curve at the point where $x = 1$.
10. Find the equation of the tangent to the curve $y = 3x - 4\sqrt{x}$ at the point where $x = 4$.
11. Find the equation of the tangent to the curve $y = \frac{6x + 4}{\sqrt{x}}$ at the point where $x = 1$.
12. A curve has equation $y = x^2 + 9x + 4$. A tangent to this curve has gradient 5. Find the equation of this tangent.
13. A tangent to the curve $y = (x - 1)(x - 5)$ has gradient 2. Find the equation of this tangent.
14. A curve has equation $y = x^3 - 6x$. There are **two** tangents to this curve with gradient 6. Find the equation of each of these tangents.
15. A curve has equation $y = x^3 - 3x^2 - 2x$. There are **two** tangents to this curve with gradient 7. Find the equation of each of these tangents.