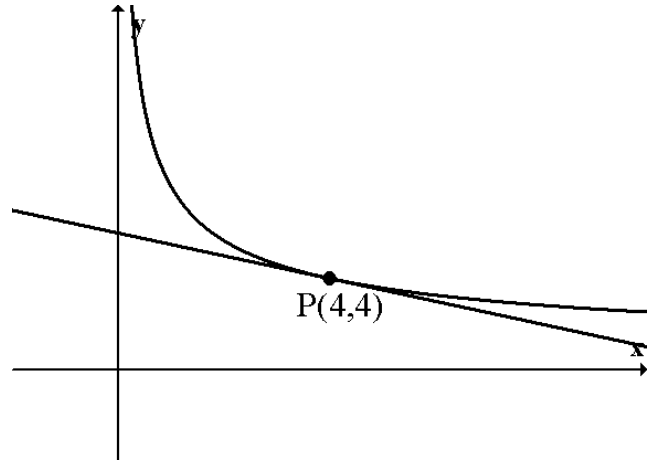


Equations of Tangents

1. A curve has equation $y = x^3 - 4x^2 + 6$. Find the equation of the tangent to this curve at the point $(2, -2)$.

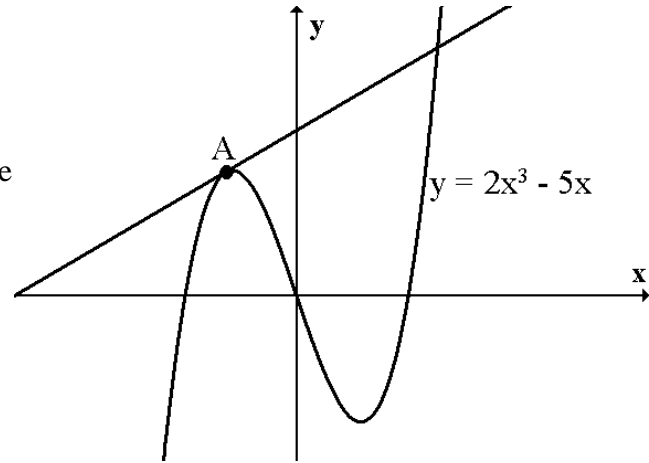
2. A curve has equation $y = \frac{8}{\sqrt{x}}$.

Find the equation of the tangent to this curve at the point $P(4, 4)$.

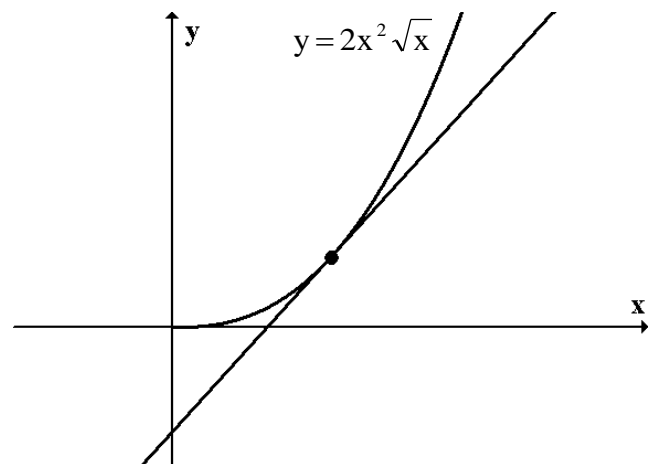


3. Find the equation of the tangent to the curve $f(x) = x^2 + 4\sqrt{x}$ at the point where $x = 1$.

4. The diagram shows part of the curve $y = 2x^3 - 5x$. Find the equation of the tangent to this curve at the point A, where $x = -1$.



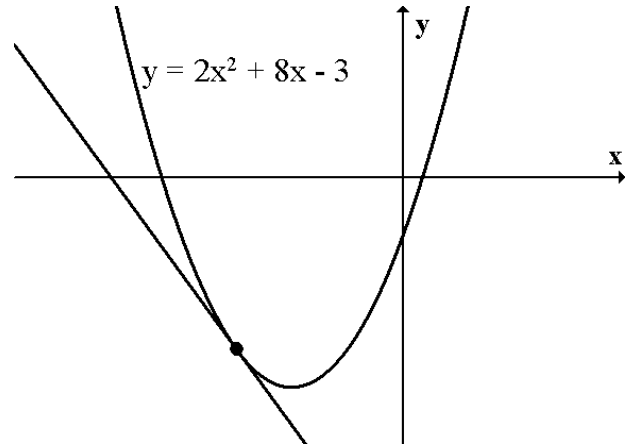
5. Find the equation of the tangent to the curve $f(x) = 2x^2\sqrt{x}$ at the point where $x = 1$.



6. A curve has equation $y = \frac{4x - x^2}{\sqrt{x}}$. Find the equation of the tangent to this curve at the point T, where $x = 4$.

7. A curve has equation $y = 3x^2 - 4x$. At the point P the tangent to this curve has gradient 2. Find the coordinates of P and hence the equation of the tangent.

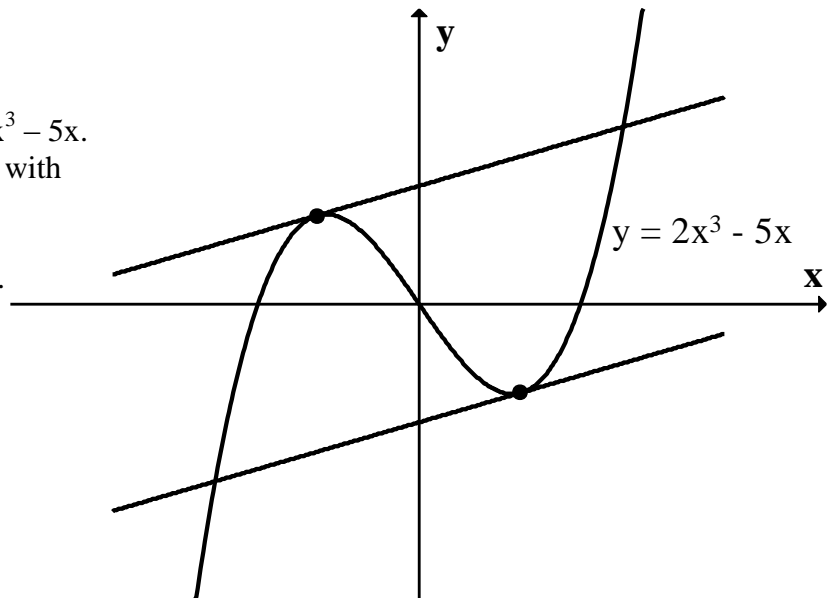
8. A curve has equation $y = 2x^2 + 8x - 3$.
A tangent to this curve has gradient -4 .
Find the equation of this tangent.



9. A curve has equation $f(x) = x\sqrt{x}$. A tangent to this curve has gradient 3.
Find the equation of this tangent.

10. The diagram shows the curve $y = 2x^3 - 5x$.
There are two tangents to this curve with gradient 1.

Find the equations of these tangents.



11. A curve has equation $y = \frac{12}{\sqrt{x}}$. A tangent to this curve has gradient -6 .

Find the equation of this tangent.

12. A curve has equation $f(x) = x(4 - x^2)$.

There are two tangents to this curve with gradient -8 .

Find the equations of these tangents.

