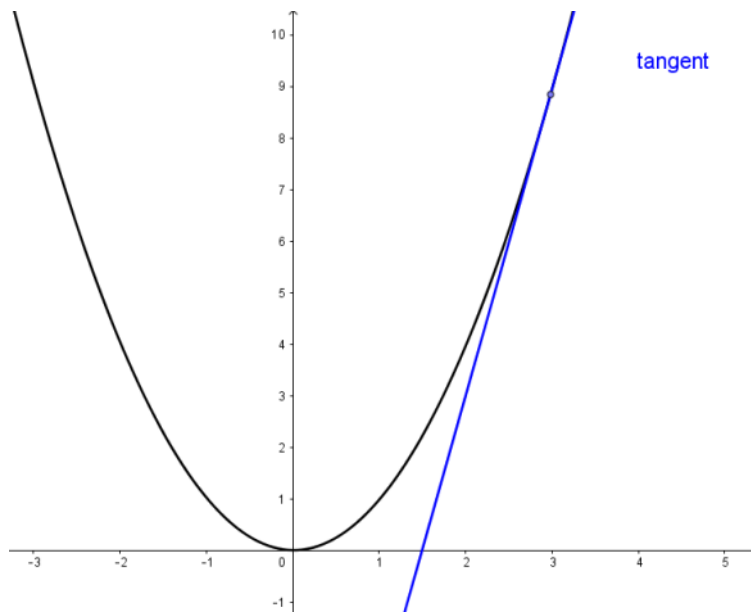


Find the equation of the tangent to the curve $y = x^2$ at the point $P(3, 9)$



Equation of a straight line
 $y = mx + c$

$$y = x^2$$

Find the gradient function

$$\frac{dy}{dx} = 2x$$

Find the gradient at $(3,9)$

$$\frac{dy}{dx} = 2 \cdot 3$$

$$\frac{dy}{dx} = 6$$

Find the equation of line with gradient 6

$$y = 6x + c$$

The line passes through the point $(3,9)$

Find c

$$9 = 6(3) + c$$

$$9 = 18 + c$$

$$-9 = c$$

$$y = 6x - 9$$