

3**DR**

$$\left(\frac{dy}{dx}\right) = \frac{2}{\sqrt{x}} - 3$$

When $x = 4$, $\left(\frac{dy}{dx}\right) = -2$

Gradient of normal = $\frac{1}{2}$

When $x = 4$, $y = -3$

$$y + 3 = \frac{1}{2}(x - 4)$$

$$x - 2y - 10 = 0$$

M1**2.1**

M1 for attempt to differentiate (so therefore answer of the form

A1**1.1**

$$\frac{dy}{dx} = \frac{k}{\sqrt{x}} - 3)$$

and **A1** for correct derivative

A0 if “+c”**A1****1.1**

Correct value of $\frac{dy}{dx}$

oe

B1 FT**1.2**

Follow through their **evaluated** $\frac{dy}{dx}$

Must be processed correctly

B1**1.1**

Correct y coordinate, accept equivalent forms

M1**1.1**

Correct method for equation of straight line through (4, their evaluated y), any non-zero gradient

A1**1.1**

Correct equation in required form i.e. $k(x - 2y - 10) = 0$ for integer k .

Must have = 0

Question	Answer	Marks	AO	Guidance
			[7]	