

6 The equation of a curve is

$$y = x^4 - 8x^3 + 20.$$

(a) Show that the gradient function, $\frac{dy}{dx}$, is

$$\frac{dy}{dx} = 4x^2(x - 6). \quad [2]$$

(b) (i) On the axes in the Printed Answer Booklet, sketch the gradient function of y . [2]

(ii) State the coordinates of the intercepts of the gradient function of y . [1]

(c) Hence state the range of values of x for which $y = x^4 - 8x^3 + 20$ is an increasing function. Express your answer in set notation. [1]

6(b)(i)

