6 The gradient of a curve is given by the equation $\frac{dy}{dx} = 6x^2 - 20x + 6$. The curve passes through the point $(2, 6)$.

(a) Find the equation of the curve. **[3]**

(b) Verify that the equation of the curve can be written as $y = 2(x+1)(x-3)^2$. **[2]**

(c) Sketch the curve, indicating the points where the curve meets the axes. **[3]**