5 Oil is leaking into the sea creating a circular oil patch. The radius, r metres, of the oil patch t hours after the start of the leak is modelled by the equation $r = 10(1 - e^{-0.3t})$.

(a) State the maximum possible radius of the oil patch. **[1]**

(b) Determine the value of t when $r = 6$. **[3]**

(c) Determine the rate at which the **area** of the oil patch is increasing when $r = 6$. Give your answer correct to **2** significant figures. **[4]**