7 A function y is defined by $y = x\sqrt{x+1}$ for $x > -1$.

(a) Show that $\frac{dy}{dx} = \frac{3x+2}{2\sqrt{x+1}}$. **[3]**

(b) Determine the range of values of x for which the function is increasing. **[3]**

(c) State what the answer to part **(b)** tells you about the graph of the gradient function of y. **[1]**