

10 (a) Express $\frac{1}{(4x+1)(x+1)}$ in partial fractions. **[3]**

(b) A curve passes through the point $(0, 2)$ and satisfies the differential equation

$$\frac{dy}{dx} = \frac{y}{(4x+1)(x+1)},$$

for $x > -\frac{1}{4}$.

Show by integration that $y = A\left(\frac{4x+1}{x+1}\right)^B$ where A and B are constants to be determined. **[6]**