

This can also be written as:

$$y(t) = \frac{6(1+t)}{6C - 4t^3 - 3t^4}$$

(b) Use IC to find C.

$$y(1) = 2 = \frac{6 \cdot 2}{6C - 7} = \frac{12}{6C - 7}$$

$$\Rightarrow 12C - 14 = 12 \Rightarrow 12C = 26 \Rightarrow C = \frac{13}{6}$$

The solution of the IVP is:

$$y(t) = \frac{6(1+t)}{13 - 4t^3 - 3t^4}$$

This can also be written as:

$$y(t) = \frac{1+t}{\frac{13}{6} - \frac{2}{3}t^3 - \frac{1}{2}t^4}$$