

Quiz 1A Key

$$y = \frac{1}{(2-x)^3} = (2-x)^{-3}$$

$$y' = -3(2-x)^{-4}(-1) = 3(2-x)^{-4} \quad 3 \text{ pt}$$

$$\text{DE: } y' - \frac{3}{2-x}y = 0$$

$$\text{LHS: } y' - \frac{3}{2-x}y = 3(2-x)^{-4} - \frac{3}{2-x}(2-x)^{-3} = 0 \quad 3 \text{ pt}$$

$$\text{RHS: } 0 \longrightarrow =$$

2 pt

Check IC:

$$-1 = y(3) = \frac{1}{(2-3)^3} = -1 \quad \checkmark \quad 2 \text{ pt}$$

Quiz 1B Key

$$y = \frac{1}{(3-x)^4} = (3-x)^{-4}$$

$$y' = -4(3-x)^{-5}(-1) = 4(3-x)^{-5} \quad 3 \text{ pt}$$

$$\text{DE: } y' = \frac{4}{3-x} y$$

$$\text{LHS: } y' = 4(3-x)^{-5} \overset{y}{=} \frac{4}{3-x} y \quad \checkmark \quad 2 \text{ pt}$$

$$3 \text{ pt} \quad \text{RHS: } \frac{4}{3-x} y = \frac{4}{3-x} (3-x)^{-4} \quad \checkmark$$

Check IC:

$$1 = y(2) = \frac{1}{(3-2)^4} = 1 \quad \checkmark \quad 2 \text{ pt}$$