

2. (a) Sketch the curve with equation

$$y = 4^x$$

stating any points of intersection with the coordinate axes.

(2)

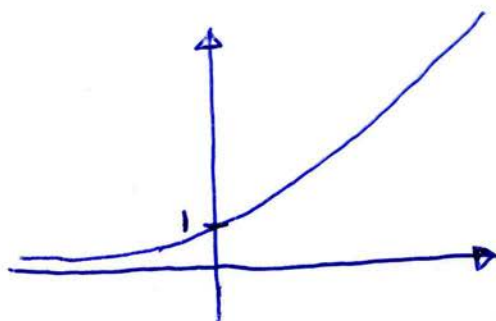
(b) Solve

$$4^x = 100$$

giving your answer to 2 decimal places.

(2)

(a)  $y = a^x$  has curve  
because  $a^x$  always  $> 0$   
and  $a^0 = 1$



(2 marks)

(b)

$$4^x = 100$$

$$\log 4^x = \log 100$$

← any log base, so long as base the same on both sides

$$x \log 4 = \log 100$$

$$x = \frac{\log 100}{\log 4}$$

(1 mark)

$$= 3.321\dots$$

$$= 3.32 \text{ 2dp}$$

(1 mark)