

Start here for
Question Number: **8**

$$a) A = P e^{kt}$$

$$200\,000\,000 = 102 e^{k75}$$

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$$\frac{200\,000\,000}{102} = e^{75k}$$

$$\frac{\ln 200\,000\,000}{102} = 75k$$

$$\frac{\ln 200\,000\,000}{102} = k$$

$$75$$

$$k = 0.0025 \text{ (sdp)}$$

$$A = 102 e^{25(0.0025)}$$

$$= 108.6$$

\therefore by 2035
should be around
200 000 108
cane toads

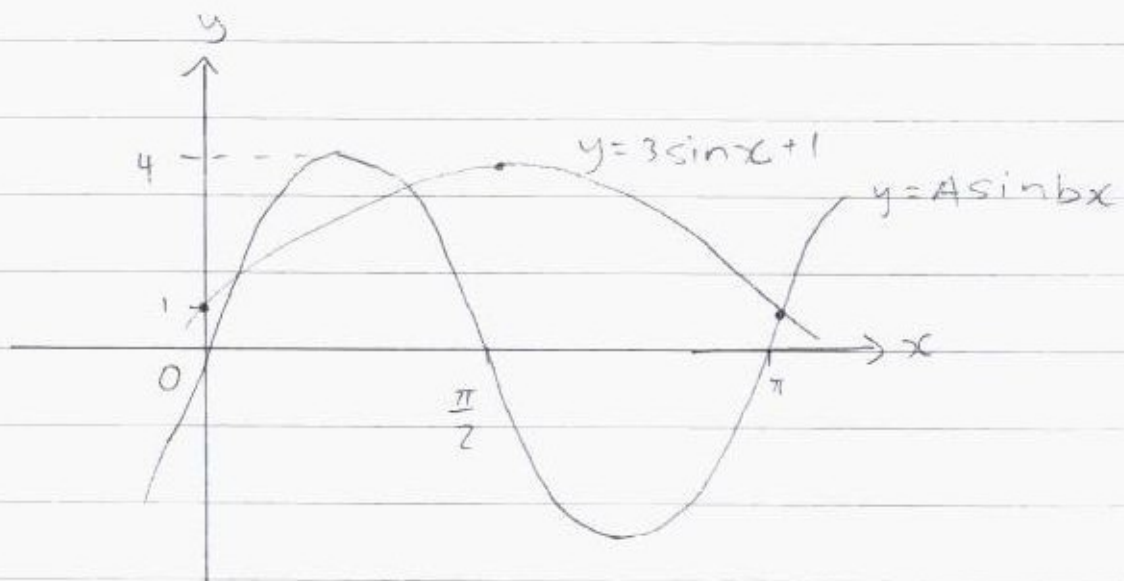
b) $P(\text{Both tails})$

$$1 - 0.36$$

$$= 0.64$$

c) $A = 4$

ii) $b = 2$



x	0	$\frac{\pi}{2}$	π
y	1	4	1

Additional writing space on back page.

d) increasing function $f'(x) > 0$

$$3x^2 - 6x + k > 0$$

$$3x^2 - 6x > -k$$

$$3x(x-2) > -k$$

Back $k > 2$

