

# Chapter 7 - Sets and Probability - Module 25 - Sets and Set Theory Experiments - Further Exercises

①

1) Write down the sample space of:

a) buying a Volvo, Toyota or a Ford car

$\{ \text{Volvo, Toyota, Ford} \}$  ✓

b) paying a bill by cash or by cheque

$\{ \text{cash, cheque} \}$  ✓

2) Describe each of the following sets in an alternative way

a)  $\{0, 1\}$

$\rightarrow \{x : x \text{ is an integer equal to } 0 \text{ or } 1\}$

$$x: x(x-1)=0$$

b)  $\{x : x^2 - 5x + 6 = 0\}$

$\rightarrow \{3, 2\}$  ✓

3) Which of the following are true statements?

a)  $\{1\} \in \{1, \{1\}, \{\{1\}\}\}$

$\rightarrow$  True ✓: The element  $\{1\}$  is a member of the set

b)  $\text{bus} \in \{x : x \text{ is a mode of transport}\}$

$\rightarrow$  True ✓: A bus is a mode of transport  
Therefore the element bus is a member of the set.

c)  $3 \in \{x : x \text{ is a complex number}\}$  ??

$\rightarrow$  False ✗: 3 is an integer

True check with Amalia!

Find the solutions for the quadratic equation

$$x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$ax^2 + bx + c = 0$$

$$a=1; b=-5; c=6$$

$$\therefore x=3, x=2$$