1. a and b are odd numbers.

(a) Give an example to show that the value of $2(a + b)$ is a multiple of 4

Let $a = 1$
Let $b = 3$
$\therefore 2(a+b)$
$= 2(1+3)$ ✓
$= 2(4)$
$= 8$ ✓
$\frac{8}{4} = 2$

(b) Show that, when a and b are both odd numbers, the value of $2(a + b)$ will always be a multiple of 4

odd + odd = even ✓
2 × even = multiple of 4 ✓

(2)

(Total for Question is 4 marks)

2. A = {multiples of 5 between 14 and 26}

B = {odd numbers between 14 and 26}

15, 20, 25

15, 17, 19, 21, 23, 25 (1)

15 and 25 are repeated = they are members of both A and B

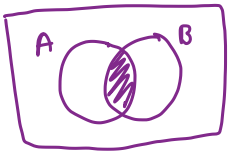
(a) List the members of $A \cup B$

A or B = entire list (but without repeating numbers)

15, 17, 19, 20, 21, 23, 25 (1)

(2)

(b) Describe the members of $A \cap B$



A and B

Members of both A and B

15 and 25 (1)

(1)

(Total for Question is 3 marks)

3. Write down an example to show that each of the following two statements is **not** correct.

(a) The factors of an even number are always even.

odd × even = even

So this even number will have an odd factor

3 × 2 = 6

3 2

3 × 2 = 6

(1)

(b) All the digits in odd numbers are odd.

↑ Only the last digit of a number determines whether it is odd or even

2 3

even

last digit = odd

So the number will be odd regardless of any digits before it

23

(1)

(Total for Question is 2 marks)