ADDITION RULE OF PROBABILITY **SOLUTIONS**

TASK 1 100 marbles and non-mutually exclusive (intersecting) sets

1 $100 \div 5 = 20$ and so there are 20 multiples of 5 in the jar.

$$P(\text{multiple of 5}) = \frac{20}{100}$$

2 $100 \div 8 = 12.5$ and so there are 12 multiples of 8 in the jar.

$$P(\text{multiple of 8}) = \frac{12}{100}$$

3 The first multiple of 5 and 8 is 40.

The next multiple of 5 and 8 is 80.

There are 2 multiples of 5 and 8 in the jar.

$$P(\text{multiple of 5 and 8}) = \frac{2}{100}$$

4 $\therefore$ P(multiple of 5 or 8) = P(multiple of 5) + P(multiple of 8) – P(multiple of 5 and 8)

$$= \frac{20}{100} + \frac{12}{100} - \frac{2}{100}$$

$$= \frac{30}{100}$$

$$= 0.3$$

TASK 2 100 marbles and mutually exclusive (non-intersecting) sets

There are 4 numbers between 85 and 90.

There are 10 square numbers in the jar. (The smallest is $1^2 = 1$ and the largest is $10^2 = 100$.)

P(number is between 85 and 90 or a square) = P(number between 85 and 90) + P(a square number)

$$= \frac{4}{100} + \frac{10}{100}$$

$$= \frac{14}{100}$$

$$= 0.14$$