Rate Calculations - set samples - paper 1

1 mile = 1760 yards, 1 kilometre = 1000 metres

1. A cheetah is sprinting across the savanna at a speed of 72 kilometres per hour.

   (a) The distance between the cheetah and its prey measures 80 metres. How long, in seconds, does it take the cheetah to travel this distance?

   ans_____

   (b) What distance does the cheetah cover in one minute, measured in metres?

   ans_____

   (c) How many metres does the cheetah travel in 2 seconds?

   ans_____

2. A peregrine falcon is diving through the air at 72 kilometres per hour.

   (a) Express the speed of the falcon in metres per hour.

   ans_____

   (b) Convert the distance covered in one minute into metres.

   ans_____

   (c) How many metres does the falcon travel in 5 seconds?

   ans_____

3. A motorboat is cutting through the waves at a speed of 108 kilometres per hour.

   (a) What distance, in kilometres, does the boat cover in one minute?

   ans_____

   (b) Express the speed of the boat in metres per hour.

   ans_____

   (c) The distance from the boat to the harbour measures 15 metres. How long, in seconds, does it take the boat to travel this distance?

   ans_____

Rate Calculations - set samples - Answers

1. a) Speed in metres per hour: 72 × 1000 = 72000 metres/hour
   Speed in metres per second: 72000 ÷ 3,600 = 20 metres/second
   80 ÷ 20 = 4 seconds
   b) 72 / 60 = 1.2 kilometres/minute
   1.2 × 1000 = 1200 metres in one minute
   c) Speed in metres per hour: 72 × 1000 = 72000 metres/hour
   72000 ÷ 3,600 = 20 metres/second
   20 × 2 = 40 metres

2. a) 72 × 1000 = 72000 metres per hour
   b) 72 / 60 = 1.2 kilometres/minute
   1.2 × 1000 = 1200 metres in one minute
   c) Speed in metres per hour: 72 × 1000 = 72000 metres/hour
   72000 ÷ 3,600 = 20 metres/second
   20 × 5 = 100 metres

3. a) 108 / 60 = 1.8 kilometres in one minute
   b) 108 × 1000 = 108000 metres per hour
   c) Speed in metres per hour: 108 × 1000 = 108000 metres/hour
   Speed in metres per second: 108000 ÷ 3,600 = 30 metres/second
   15 ÷ 30 = 0.5 seconds