1 A gold bar has a mass of 12.5 kg.

The density of gold is 19.3 g/cm³

Work out the volume of the gold bar.
Give your answer correct to 3 significant figures.

.... cm³

(Total for Question   is 3 marks)

2 Emily drives 186 miles in 3 hours.

(a) What is her average speed?

.... mph

(2)

Sarah drives at an average speed of 58 mph for 4 hours.

(b) How many miles does Sarah drive?

.... miles

(2)

(Total for Question   is 4 marks)

3   A force of 70 newtons acts on an area of $20 \, \text{cm}^2$

The force is increased by 10 newtons.
The area is increased by $10 \, \text{cm}^2$

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

Helen says,

"The pressure decreases by less than 20%"

Is Helen correct?
You must show how you get your answer.

(Total for Question   is 3 marks)

4   A plane travels at a speed of 213 miles per hour.

(a) Work out an estimate for the number of seconds the plane takes to travel 1 mile.

.... seconds

(3)

(b) Is your answer to part (a) an underestimate or an overestimate?
Give a reason for your answer.

....

....

(1)

(Total for Question   is 4 marks)

5   Nimer was driving to a hotel.
     He looked at his Sat Nav at 13 30
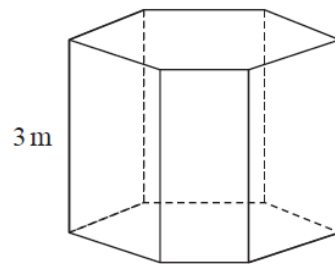
Time	13 30
Distance to destination	65 miles

Nimer arrived at the hotel at 14 48

Work out the average speed of the car from 13 30 to 14 48
You must show all your working.

.... mph

(Total for Question   is 4 marks)

6 The diagram shows a prism placed on a horizontal floor.

3 m

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

The prism has height 3 m
The volume of the prism is 18 m³

The pressure on the floor due to the prism is 75 newtons/m²

Work out the force exerted by the prism on the floor.

.... newtons

(Total for Question   is 3 marks)

7 Andy cycles a distance of 30 km at an average speed of 24 km/h.
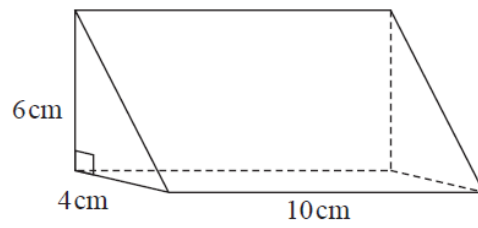He then runs a distance of 12 km at an average speed of 8 km/h.

Work out the total time Andy takes.
Give your answer in hours and minutes.

.... hours .... minutes

(Total for Question   is 3 marks)

8   The diagram shows a solid triangular prism.

The prism is made from wood with a density of 0.8 g/cm³

Work out the mass of this prism.

.... g

(Total for Question   is 3 marks)