

Name: _____

GCSE Unit 11 Practice Assessment

Date:

Time: 50 minutes

Total marks available: 45

Total marks achieved: _____

Questions

Q1.

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

Find the pressure exerted by a force of 900 newtons on an area of 60cm².
Give your answer in newtons/m².

..... newtons/m²

(Total for question = 2 marks)

Q2.

Mrs Jennings shares £770 between her two sons, Pete and Tim.
She shares the money in the ratio of her sons' ages.

The combined age of her two sons is 66 years.
Pete is 6 years younger than Tim.

Work out how much money each son gets.
You must show all your working.

Pete £

Tim £

(Total for Question is 5 marks)

Q3.

160 cm of gold wire has a weight of 17.8 grams.

Work out the weight of 210 cm of the gold wire.

.....
(Total for Question is 3 marks)

Q4.

y is directly proportional to x .

When $x = 600$, $y = 10$

(a) Find a formula for y in terms of x .

$y = \dots\dots\dots$
(3)

(b) Calculate the value of y when $x = 540$

$y = \dots\dots\dots$
(1)

(Total for Question is 4 marks)

Q5.

Bella invests £5000 in an account for two years.
The account pays 3% compound interest per annum.

Bella has to pay 20% tax on the interest earned each year.
This tax is taken from the account at the end of each year.

How much money will Bella have in her account at the end of the two years?

(Total for question = 4 marks)

Q6.

Peter has £20 000 to invest in a savings account for 2 years.

He finds information about two savings accounts.

<p style="text-align: center;">Bonus Saver</p> <p style="text-align: center;">Compound interest</p> <p style="text-align: center;">4% for the first year then 1.5% each year</p>

<p style="text-align: center;">Fixed Rate</p> <p style="text-align: center;">Compound interest</p> <p style="text-align: center;">2.5% each year</p>

Peter wants to have as much money as possible in his savings account at the end of 2 years.

Which of these savings accounts should he choose?

(Total for question = 4 marks)

Q7.

Asif is going on holiday to Turkey.

The exchange rate is $\text{£}1 = 3.5601$ lira.

Asif changes $\text{£}550$ to lira.

(a) Work out how many lira he should get.

Give your answer to the nearest lira.

..... lira
(2)

Asif sees a pair of shoes in Turkey.

The shoes cost 210 lira.

Asif does not have a calculator.

He uses $\text{£}2 = 7$ lira to work out the approximate cost of the shoes in pounds.

(b) Use $\text{£}2 = 7$ lira to show that the approximate cost of the shoes is $\text{£}60$

(2)

(c) Is using $\text{£}2 = 7$ lira instead of using $\text{£}1 = 3.5601$ lira a sensible start to Asif's method to work out the cost of the shoes in pounds?

You must give a reason for your answer.

.....
.....
(1)

(Total for question = 5 marks)

Q8.

Katy invests £2000 in a savings account for 3 years.

The account pays compound interest at an annual rate of

2.5% for the first year

$x\%$ for the second year

$x\%$ for the third year

There is a total amount of £2124.46 in the savings account at the end of 3 years.

(a) Work out the rate of interest in the second year.

.....
(4)

Katy goes to work by train.

The cost of her weekly train ticket increases by 12.5% to £225

(b) Work out the cost of her weekly train ticket before this increase.

£.....
(2)

(Total for question = 6 marks)

Q9.

The diagram shows a solid triangular prism.

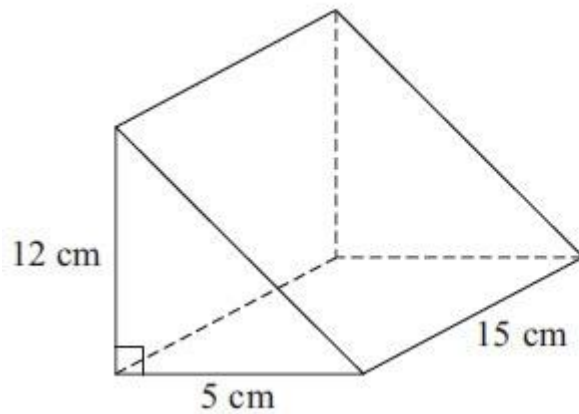


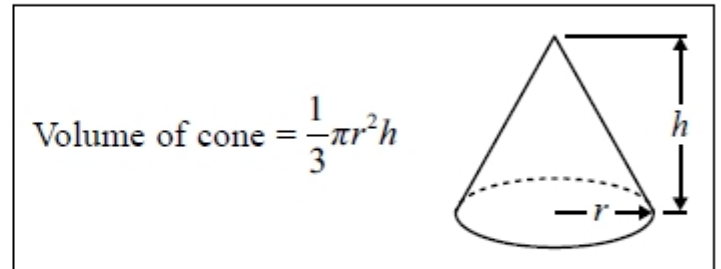
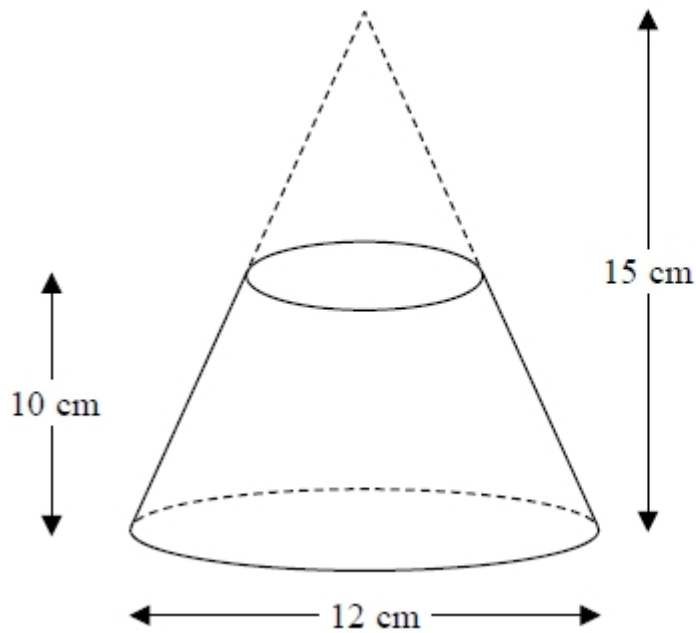
Diagram **NOT**
accurately drawn

The prism is made from metal.
The density of the metal is $6.6 \text{ grams per cm}^3$.
Calculate the mass of the prism.

(Total for Question is 3 marks)

Q10.

A frustum is made by removing a small cone from a large cone as shown in the diagram.



The frustum is made from glass.
The glass has a density of 2.5 g / cm^3

Work out the mass of the frustum.
Give your answer to an appropriate degree of accuracy.

..... 9

(Total for question = 5 marks)

Q11.

The diagram shows a solid wooden sphere.

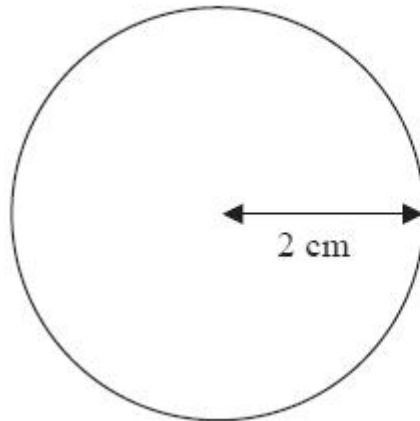


Diagram NOT
accurately drawn

The radius of the sphere is 2 cm.

The mass of the sphere is 45 grams.

Wood will float on the Dead Sea only when the density of the wood is less than 1.24 g/cm^3 .

Will this wooden sphere float on the Dead Sea?

(Total for Question is 4 marks)