N2 Number exam review

1 The volume of oil in a tank is 1000 litres, correct to the nearest 10 litres. The oil is poured into tins of volume 2.5 litres, correct to one decimal place.

Calculate the upper bound of the number of tins which will be required.

....

(Total 3 marks)

2 a Use your calculator to work out the value of

$$2.6 - \frac{9.8}{2.7 + 1.2}$$

Write down all the figures on your calculator display.

....

(2)

b Give your answer to part **a** correct to 2 significant figures.

....

(1)

(Total 3 marks)

3 Correct to 1 significant figure, $x = 7$ and $y = 9$

a Calculate the lower bound for the value of xy

....

(2)

b Calculate the upper bound for the value of $\frac{x}{y}$

....

(3)

(Total 5 marks)

4 a Work out $\frac{2}{5} + \frac{3}{8}$

....

(2)

b Work out $5\frac{2}{3} - 2\frac{3}{4}$

....

(3)

(Total 5 marks)

5 Asif, Barbara and Curtly share some money.

Asif receives $\frac{3}{8}$ of the money.   Barbara receives $\frac{1}{3}$ of the money.

What fraction of the money does Curtly receive?

....

(Total 3 marks)

6 Elliot did an experiment to find the value of g m/s^2, the acceleration due to gravity. He measured the time, T seconds, that a block took to slide L m down a smooth slope of angle $x°$.
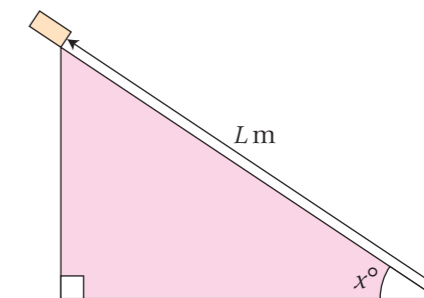
He then used the formula $\quad g = \dfrac{2L}{T^2 \sin x°}$

to calculate an estimate for g.

$T = 1.3$ correct to 1 decimal place.
$L = 4.50$ correct to 2 decimal places.
$x = 30$ correct to the nearest integer.

a Calculate the lower bound and the upper bound for the value of g.
Give your answers correct to 3 decimal places.

Lower bound ....

Upper bound ....

(4)

b Use your answers to part **a** to write down the value of g to a suitable degree of accuracy. Explain your reasoning.

....

....

....
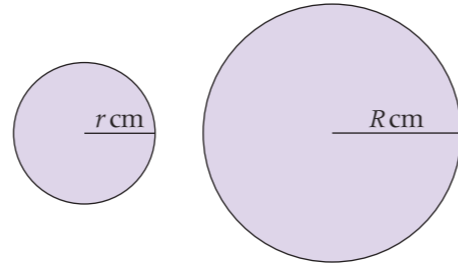
(1)

(Total 5 marks)

7

Diagram **NOT** accurately drawn

The diagram represents two metal spheres of different sizes.

The radius of the smaller sphere is r cm.
The radius of the larger sphere is R cm.

$r = 1.7$ correct to 1 decimal place.

$R = 31.0$ correct to 3 significant figures.

a Write down the upper and lower bounds of r and R.

Upper bound of r = ...

Lower bound of r = ...

Upper bound of R = ...

Lower bound of R = ...

(2)

b Find the smallest possible value of $R - r$.

....

(1)

The larger sphere of radius R cm was melted down and used to make smaller spheres of radius r cm.

c Calculate the smallest possible number of spheres that could be made.

....

(4)

(Total 7 marks)