Q1.

All tickets for a concert are the same price.

Amy and Dan pay £63 altogether for some tickets.

Amy pays £24.50 for 7 tickets.

How many tickets does Dan buy?

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Answer ....

(Total 4 marks)

Q2.

Mr Jones works for five days each week.

If he uses his car to travel to work,

        each day he drives a total distance of 24.2 miles
        his car travels 32.3 miles per gallon of petrol
        petrol costs £1.27 per litre.

If he uses the bus to travel to work, he can buy a weekly ticket for £19.50

Use 1 gallon = 4.5 litres

Is it cheaper if he uses his car or the bus to travel to work?

You **must** show your working.

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Answer ....

(Total 5 marks)

Q3.

Josef runs 400 metres in 1 minute.

He assumes he can run any distance at the same rate.

He says,

"I would run 10 000 metres in 25 minutes."

Tick a box to show whether his time to run 10 000 metres is likely to be accurate.

No, the time will be longer ☐

Yes, the time will be 25 minutes ☐
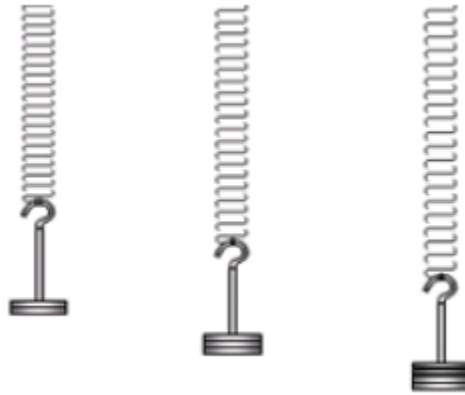
No, the time will be shorter ☐

Give working and a reason to support your answer.

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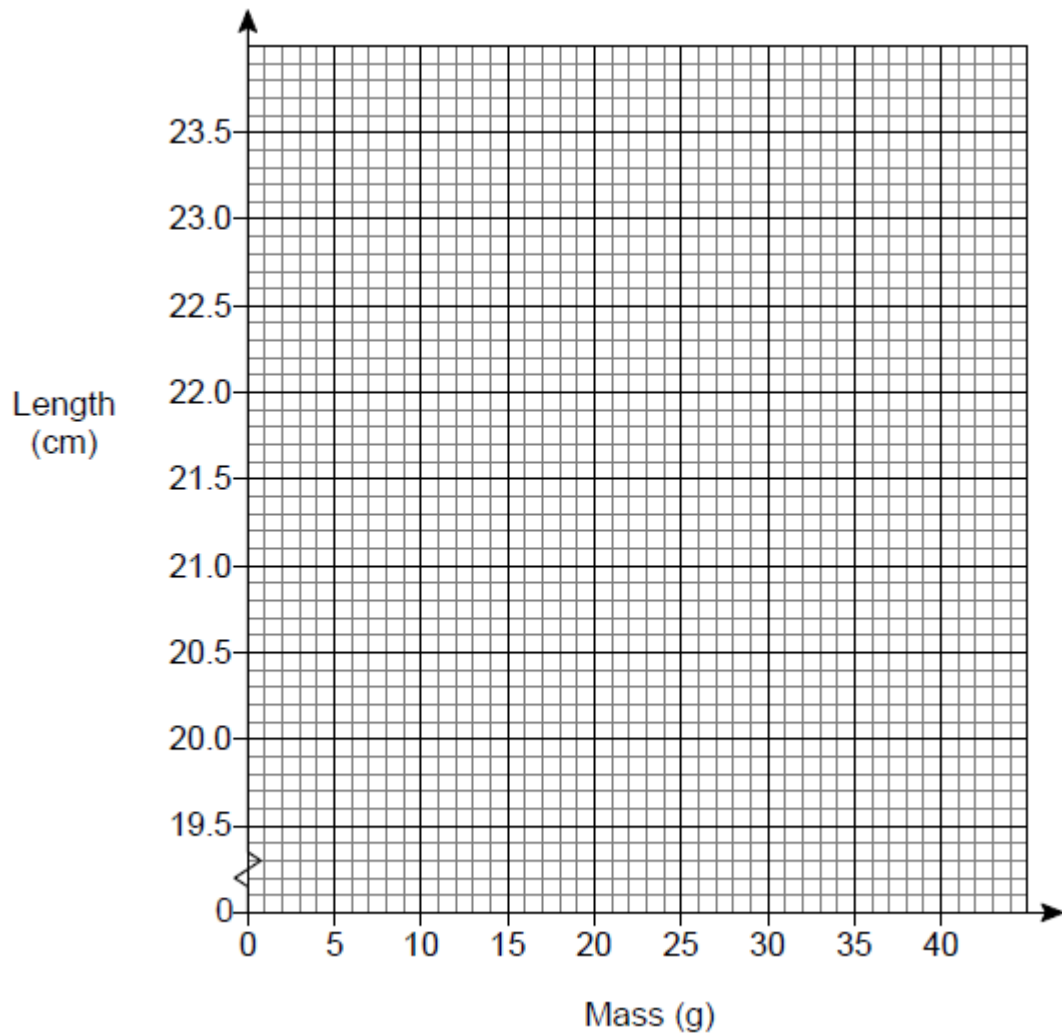
(Total 2 marks)

Q4.

In an experiment, different masses are hung on a spring.

The length of the spring is measured for each mass.

Mass (g)	10	20	30	40
Length (cm)	20.8	21.6	22.4	23.2

(a)   Draw a graph to show the length of the spring for masses from 10 g to 40 g

(2)

(b)   Estimate the length of the spring with no mass hung on it.

Answer .... cm

(1)

(c)   How much longer is the spring with a 35 g mass than with a 15 g mass?

....

....

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Answer .... cm

(2)
(Total 5 marks)

Q5.

The mass of 40 cm³ of copper is 356 grams.

Work out the mass of 90 cm³ of copper.

....

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....

Answer ....grams

(Total 2 marks)

Q6.

Here are two offers for batteries.

OFFER A	OFFER B
Pack of 4	Pack of 5
£2.52	£2.75
$\frac{1}{3}$ off	Pay for 3 packs get 1 free

Zak wants to buy 40 batteries.

Which is the cheaper offer?
You **must** show your working.

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Answer ....

(Total 5 marks)

Q7.

Washing powder is sold in two sizes, 600 grams and 1500 grams.

Washing powder

600 g

£3.30

Washing powder

1500 g

Was £9.60
Now 15% off
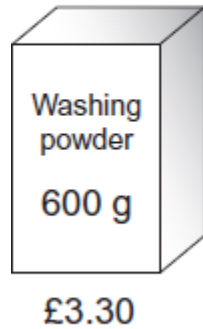
Which size is better value for money?
You **must** show your working.

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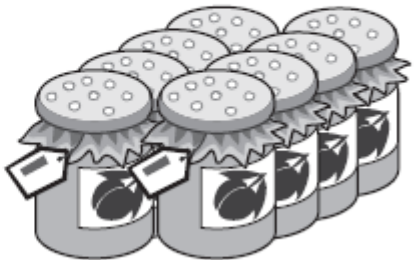
Answer ....

(Total 6 marks)

Q8.(a)

Plum jam
Recipe for 8 jars

Caster Sugar   1.8 kg
Plums   1.2 kg
Water   160 ml
Lemon Juice   100 ml

Jayne wants to make **4 jars** of jam.

How many **grams** of plums does she need?

Answer .... grams

(1)

(b)   Jayne has 860 grams of caster sugar.

How much **more** caster sugar will she need to make **4 jars** of jam?
State the units of your answer.

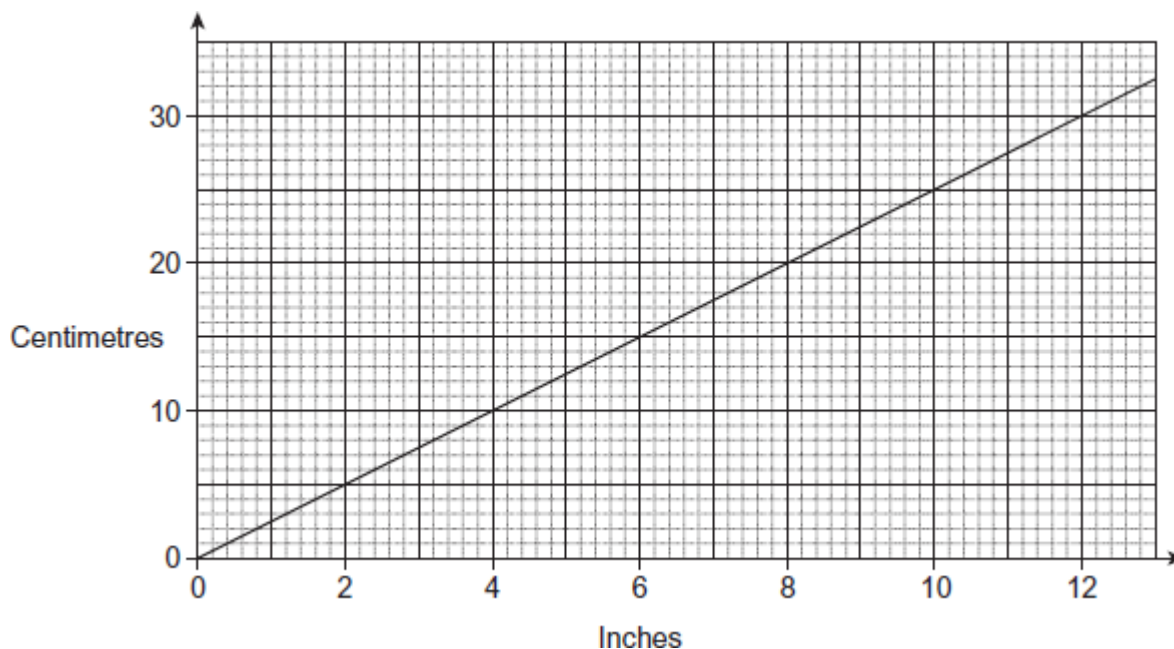..

Answer ....

(2)
(Total 3 marks)

Q9. Here is a conversion graph.

Shaz has 150 cm of material.
She needs 75 inches of material to make a skirt.

Does she have enough material?
You **must** show your working.

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(Total 3 marks)

Q10.(a)   Here are four equations connecting y and x.
k is a constant.

$$y = kx \qquad\qquad y = \frac{k}{x} \qquad\qquad y = kx^2 \qquad\qquad y = \frac{k}{x^2}$$

Match each equation to its statement.

y is **directly** proportional to x Equation ....

y is **directly** proportional to x^2 Equation ....

y is **inversely** proportional to x Equation ....

y is **inversely** proportional to x^2 Equation ....

(2)

(b) y is **inversely** proportional to x.
When $x = 3$, $y = 8$

Work out the value of y when $x = 5$

....

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Answer ....

(3)
(Total 5 marks)

Q11.(a)   A pack of 8 batteries costs £5.99

How much does each battery cost?

....

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Answer .... pence

(2)

(b)   A pack of 6 batteries of the same type costs £3.99

Is this better value?

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(2)
(Total 4 marks)

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Q12. The diagram shows a field.

Not drawn
accurately

280 m

86 m

198 m
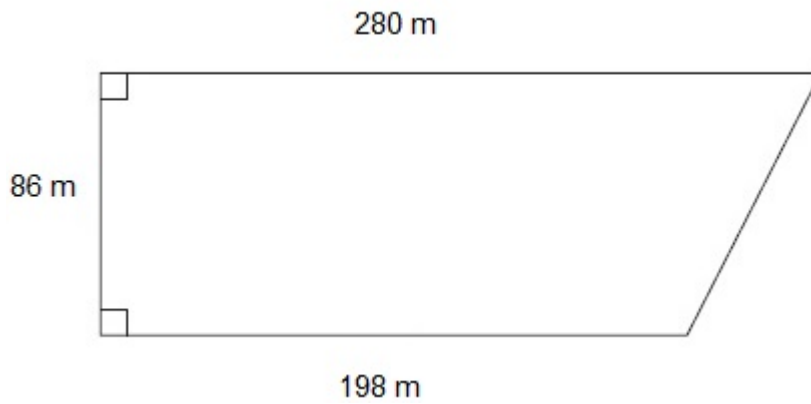
(a)   Work out the area of the field.

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Answer .... m²

(2)

(b)   1 acre = 4047 square metres

A farmer keeps cows in the field.
He is allowed 7 cows per acre.

Work out the maximum number of cows he is allowed to put in the field.

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Answer ....

(4)
(Total 6 marks)

Q13. Here are some of the ingredients for a pie.

Minced lamb	450 g
Potatoes	900 g
Carrots	75 g
Stock	300 ml

Oliver has only 300 g of minced lamb.

How much of the other ingredients should he use?

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Answer Potatoes .... g

Carrots .... g

Stock .... ml

(Total 3 marks)