

Non-calculator Questions

NCFE

1.

Asha reads that the women's Olympic record for swimming 100 m is 52.7 seconds.

This means that the record holder swam at an average speed of 1.9 metres per second.

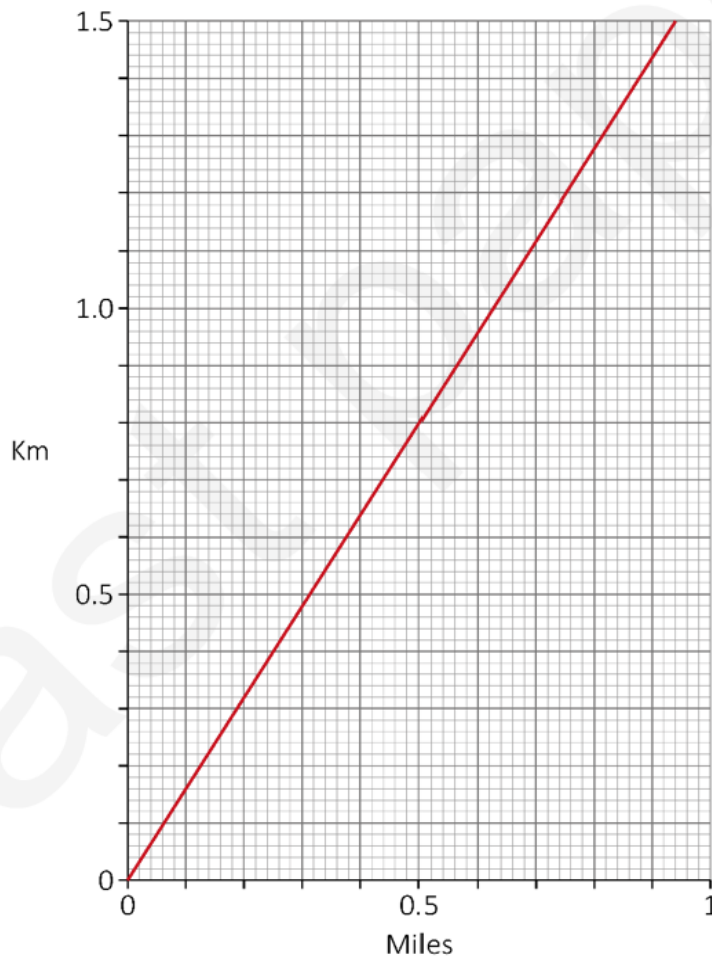
A goldfish can swim at a speed of about 0.9 miles per hour.

Did the Olympic record holder swim faster than a goldfish?

Show how you decide.

This conversion graph will help you.

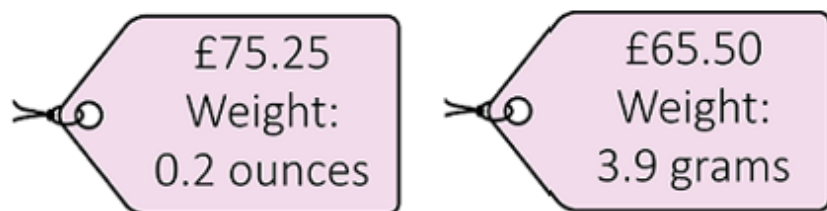
[4 marks]



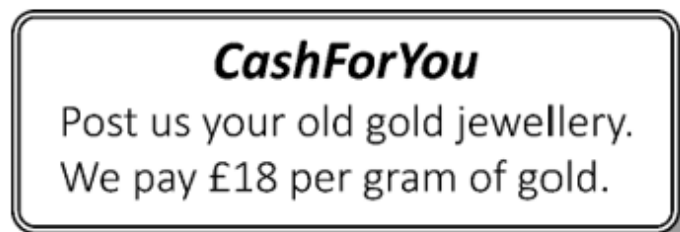
Your answer:		

2.

Hannah buys two gold necklaces.



She sees an advert online offering to buy jewellery.



If Hannah sends both necklaces to **CashForYou**, will she make a profit?
Show your working.

Use the conversion: 1 ounce = 28 grams (g)

[3 marks]

Your answer:

City & Guilds

3.

A driver sees this speed limit sign in France. The speed is in kilometres per hour.



He is driving at 80 miles per hour.

$$1 \text{ kilometre} = \frac{5}{8} \text{ mile}$$

He thinks this is below the speed limit.

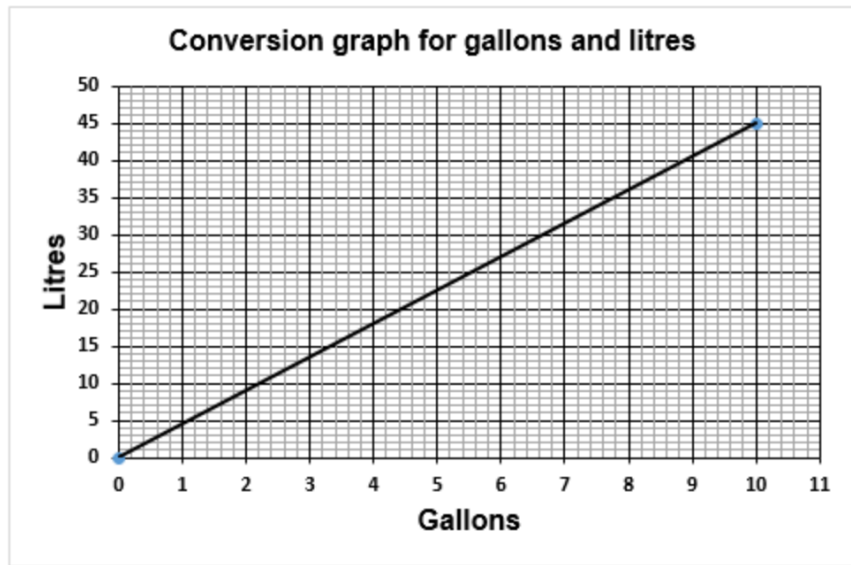
Is he correct? Explain your answer showing your calculation.

Decision (*tick one box*) **yes** ☐ **no** ☐

Explanation

(2 marks)

4.



What is 6 gallons in litres, to the nearest litre?

litres

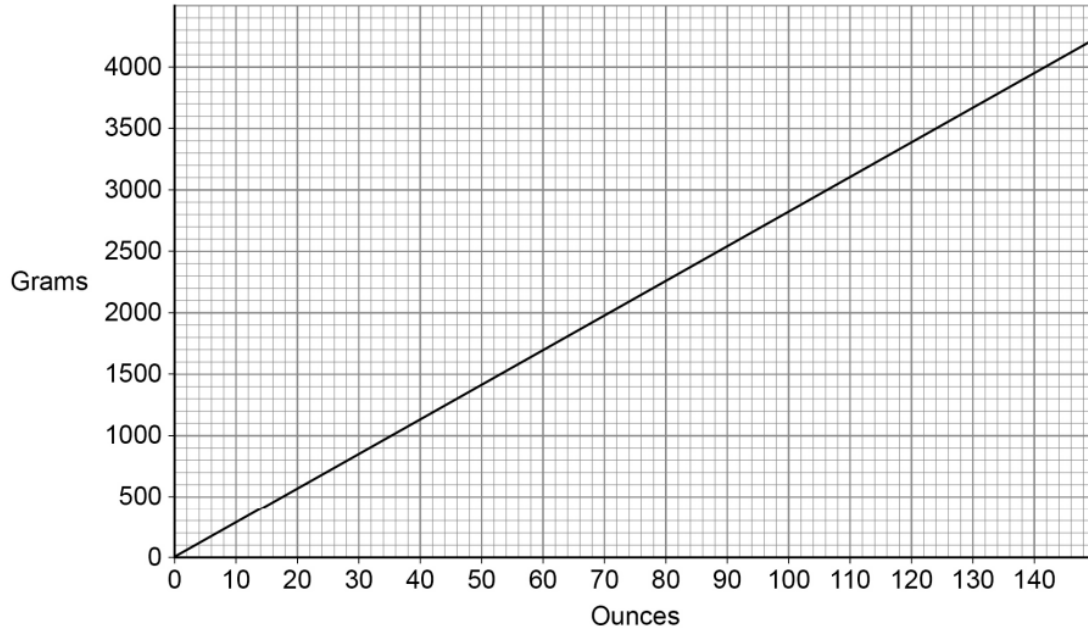
(1 mark)

5.

Jo has a baby.

She calls the baby Ella.

- (a) The graph can be used to convert between grams and ounces.



At birth, Ella weighed 3.5 kg

Did Ella weigh **more than** 8 pounds?

Use 1 pound = 16 ounces

You **must** show your working.

[4 marks]

- (b)** Here are the birth weights of 7 other babies born on the same day as Ella.

Weight (kg)	2.3	2.5	2.7	3.6	4	4	4
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Jo's mum says,

"Ella's weight of 3.5 kg is more than the average weight of the other 7 babies."

Jo says,

"It depends on which type of average you use."

Show that Jo is correct.

[4 marks]

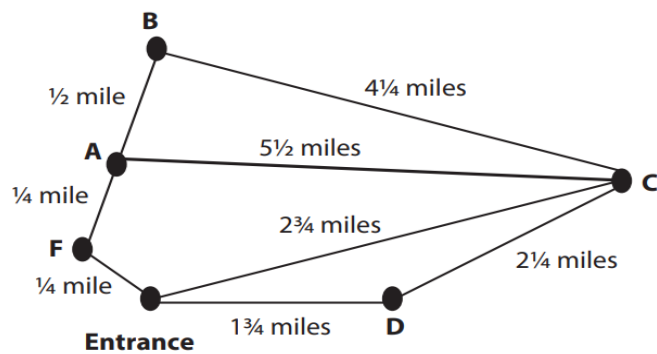
This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Calculator Questions

Edexcel

1.

Olga has this sketch of the paths in a park.



She wants a cycle route that

- starts and ends at the entrance
- goes through point C at least once
- has a total length between 15 **kilometres** and 20 **kilometres**.

1 km = 0.6 miles.

Plan a suitable route.
Work out the total distance of the route.

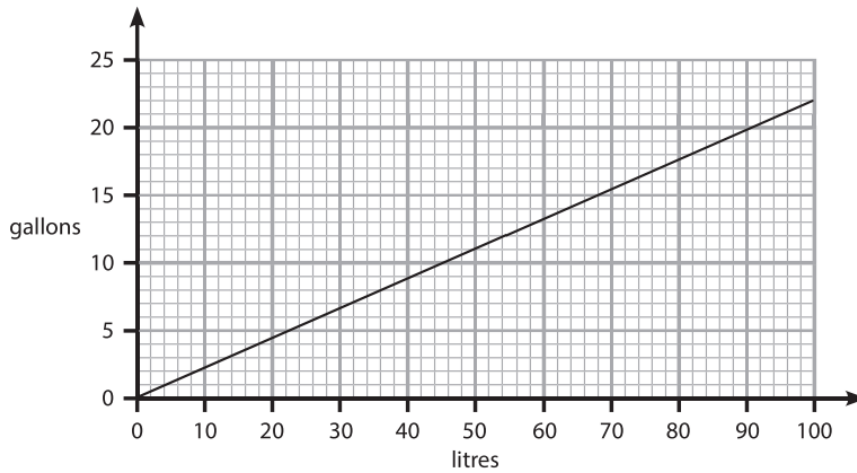
(5)

Route

Total distance

2.

This graph can be used to convert between gallons and litres.



(a) Convert 60 litres to gallons.

(1)

 gallons

One day

- Anaya used 44 litres of fuel
- Meera used 8 gallons of fuel.

Anaya used more fuel than Meera.

(b) Use the graph to work out how much more.
Remember to give units with your answer.

(2)

3.

Susie wants to make a dress.

To make the dress she needs a piece of fabric with a length of $2\frac{3}{4}$ yards.

Fabric is sold in lengths measured in cm.

1 inch = 2.54 cm

1 yard = 36 inches

Work out the length of fabric, in cm, Susie needs to make the dress.
You **must** show your working.

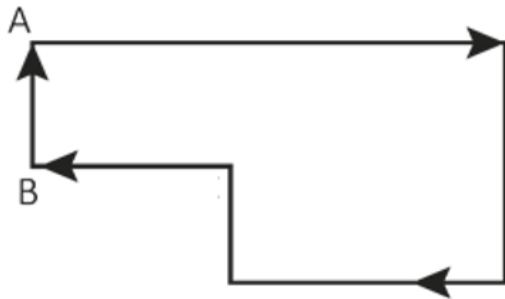
(3)

cm

NCFE

4.

Peta cycles around this route:



Not drawn
accurately

She starts at A.

When she reaches B she has cycled 12.5 miles.

(i) What is 12.5 miles in km?

Use this conversion: $1.6 \text{ km} = 1 \text{ mile}$

[1 mark]

Your answer:	

5.

Asif finds some trial results about two types of potato, Cara and Desiree.

Trial number	Yield (per potato plant)	
	Cara	Desiree
1	1.65 kg	1.25 kg
2	1.42 kg	1.42 kg
3	1.88 kg	2.10 kg
4	1.73 kg	1.76 kg
5	1.97 kg	

Yield is the weight of potatoes that can be produced from one potato plant.

Asif wants to plant the type of potato with the higher yield.
He will grow 20 potato plants.

Use the trial data to recommend which type of potato Asif should plant
and estimate the expected total weight of potatoes, in pounds, that he will get.

Use the conversion: 1 kg = 2.2 pounds

[4 marks]

<p>Your answer:</p>	
<p>Type of potato</p>	
<p>pounds</p>	

6.

Bill sees a new car he likes.

The car's fuel consumption is 16 **km** per litre.

Bill drives a total of 45 **miles** each day.

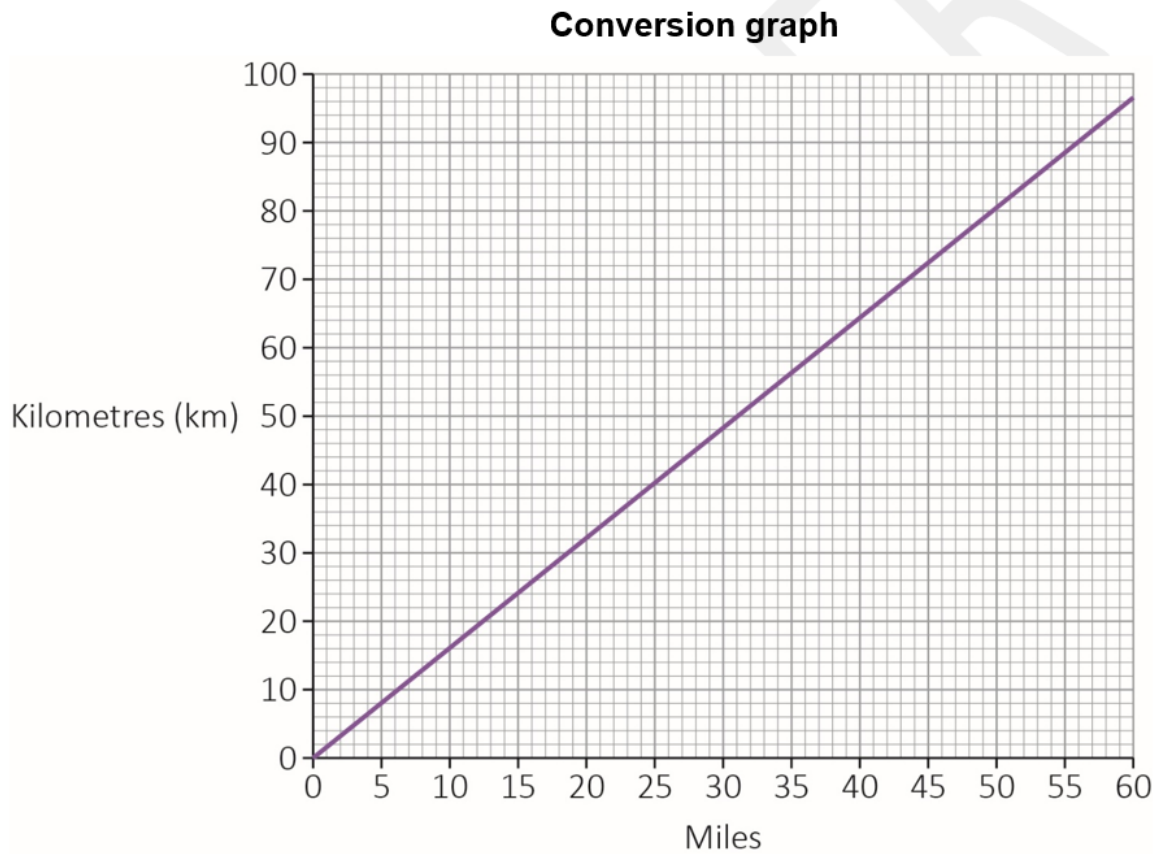
Fuel costs 136.9 pence per litre.

Work out the total cost of fuel Bill would use each day in this car.

Give your answer in pounds and to the nearest penny.

[4 marks]

Use this conversion graph to help you:



Blank area for working out the answer.

Your answer:

£

7.

Kamrul wants to wash his car.

He knows it takes 120 litres of water to wash a car in a car wash.

Kamrul decides to hand wash his car.

He fills up a 3-gallon bucket six times to wash his car.

What percentage of 120 litres does Kamrul save?

Use the conversion: 1 gallon = 4.55 litres

[3 marks]

Blank area for working out the answer.

Your answer:

%

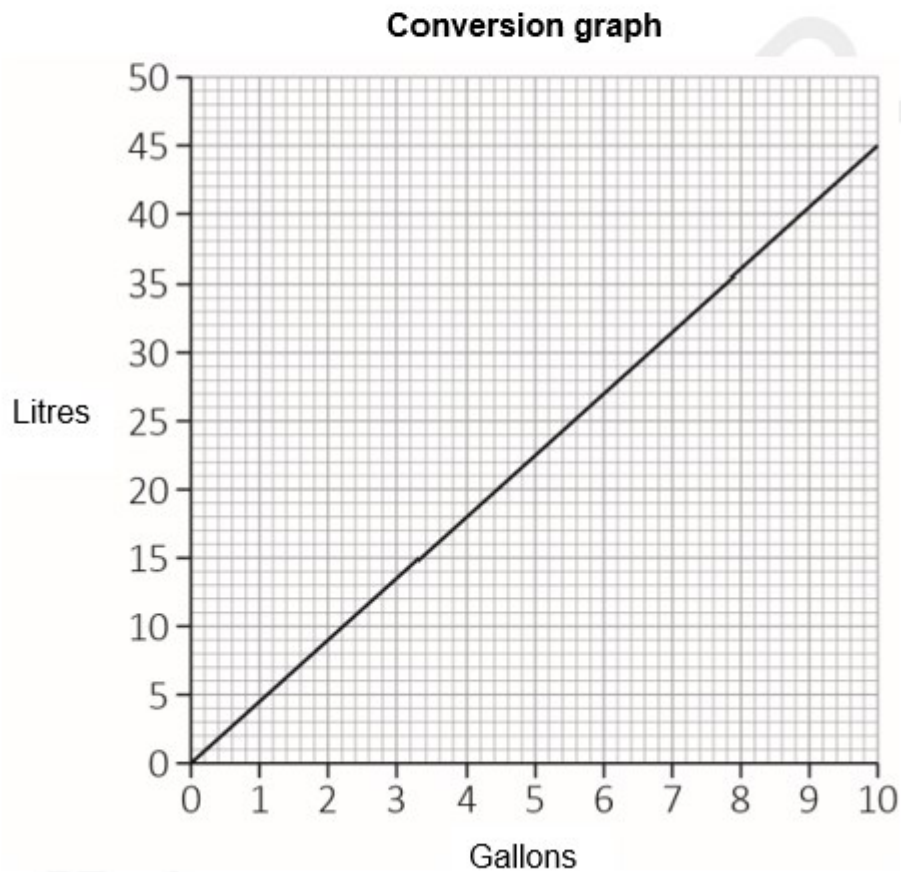
8.

Judy is an apprentice plumber.

She needs to work out the capacity of a water tank in gallons.

The water tank is a cylinder with radius 0.7 m and height 3 m

Judy uses this graph to convert between litres and gallons.



Work out the capacity of this water tank in gallons.

Give your answer to the nearest gallon.

You must show your working.

Use $\pi = 3.14$

Use $1 \text{ m}^3 = 1000 \text{ litres}$

[5 marks]

PAST PAPER

Your answer:

gallons

9.

Abdul hires a skip for rubbish.

The skip has a capacity of 4 m^3

A wheelie bin has a capacity of 250 litres.

How many full wheelie bins will be needed to fill one skip?

Use $1 \text{ m}^3 = 1000 \text{ litres}$

[2 marks]

Your answer:	wheelie bins
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City & Guilds

10.

1 gallon = 4.546 litres

10 litres in gallons is approximately

(tick one box)

- A. 0.45 gallons ☐
- B. 2.2 gallons ☐
- C. 45.5 gallons ☐
- D. 22 gallons ☐

(1 mark)

11.

A woman has a new fitness watch.

She uses this formula to calculate her **step length**.

$$\text{Step length}(\text{feet}) = \frac{\text{a measured distance in feet}}{(\text{the number of steps taken})}$$

Her **measured distance** was **20 feet** and the number of **steps taken** was **16**.

In her first week she walks 67118 steps.

She wants to know how many kilometres she walked in the first week.

$1 \text{ foot} = 0.0003048 \text{ km}$

What distance did she walk?

Show your working

Distance walked _____ km

(3 marks)

Highfield

12.

Convert 5000 grams (g) in to pounds (lb).

1kg = 2.2lb

Show your working out and write the answer in the box below.

(2 marks)

Answer: _____ lb

13.

Convert 17 pints into litres.

5 pints = 2.84 litres

Show your working and write the answer in the box below.

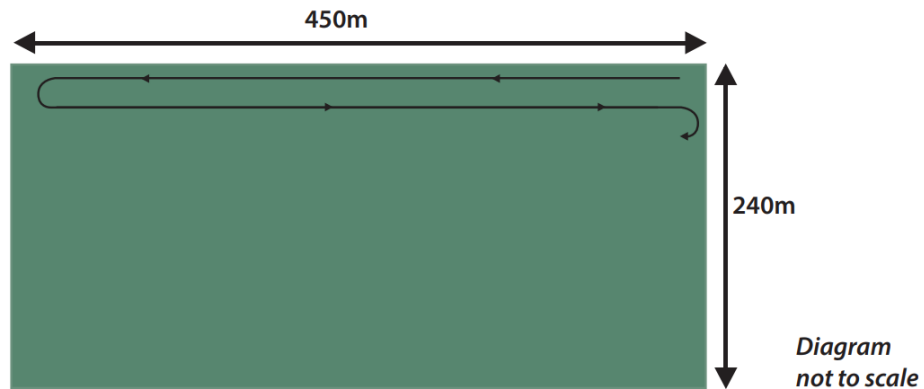
(2 marks)

Answer: _____ litres

14.

You have a rectangular field and need to cut the grass.

You need to know how much fuel you will use.



You will drive the tractor along the field and back as shown in the diagram.

- The tractor will cut a 2.5-metre-wide strip of grass behind it.
- It will drive at a constant 5 miles per hour.
- The tractor uses 7 litres of fuel per hour.
- 1 mile = 1.6 kilometres.

How much fuel will the tractor use to cut the whole field of grass?

Show your working out and write the answer in the box below.

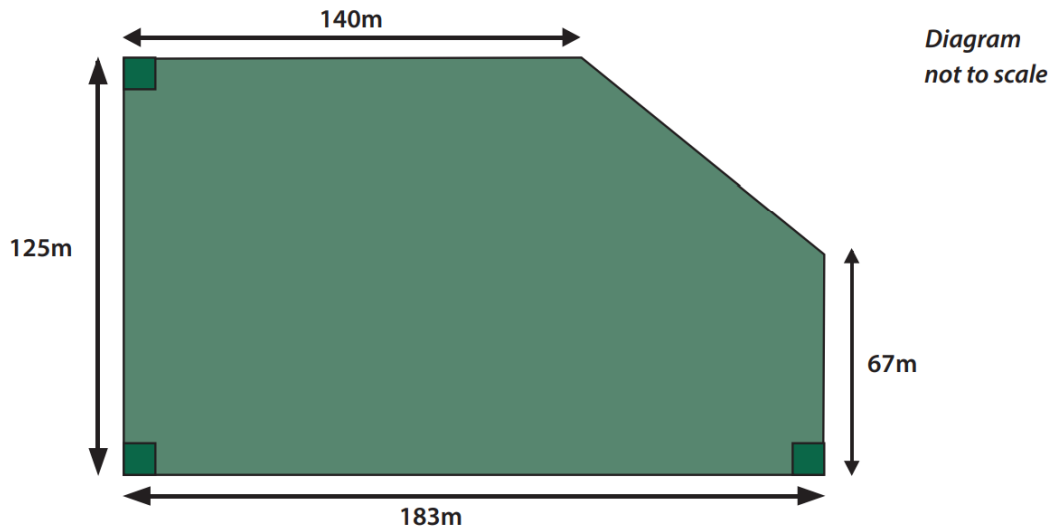
(5 marks)

Answer: _____ **litres**

15.

You are harvesting the corn.

This is a plan of the field you have grown corn in.



- The mean weight of corn grown per acre is 3.75 tons.
- The selling price of corn is £179.40 per ton.
- 1 acre = 4046.86 m²

Work out the total value of the corn grown in the field.

Show your working out and write the answer in the box below.

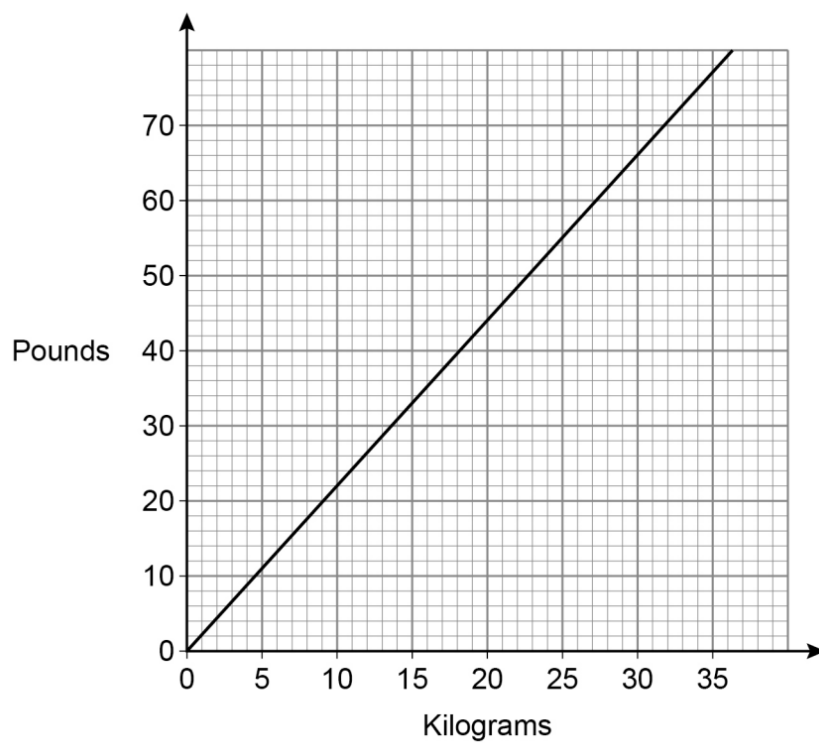
(6 marks)

Answer: £ _____

AQA

16.

The graph can be used to convert between pounds and kilograms.



Use the graph to convert 40 pounds to kilograms.

[2 marks]

Answer _____ kilograms

17.

Pete wants to hide the wires from his TV.

Wires can be hidden in plastic trunking.

Trunking can be cut to any length.

Pete needs three pieces of trunking measuring

$1\frac{1}{2}$ metres

$2\frac{1}{4}$ metres

90 cm

Pete has 15 feet of trunking.

Is this enough?

Use 1 foot = 12 inches

Use 1 inch = 2.5 cm

[4 marks]
