GCSE Mathematics Unit 3 4353-01
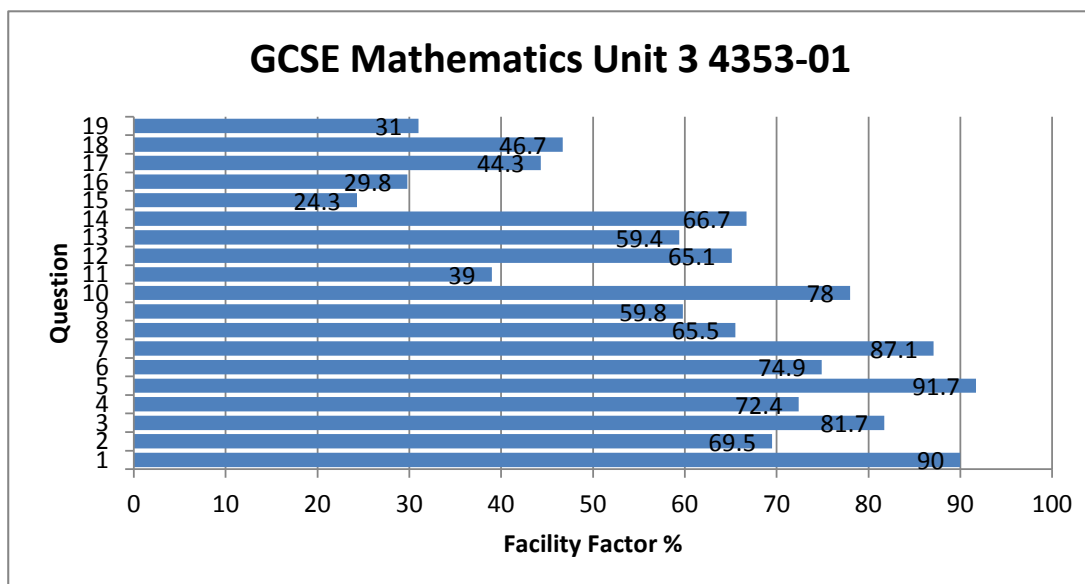
All Candidates' performance across questions

Question Title	N	Mean	S D	Max Mark	F F	Attempt %	
1	1898	5.4	1.1	6	90	100	
2	1892	2.1	1.1	3	69.5	99.6	
3	1782	1.6	0.7	2	81.7	93.8	
4	1897	3.6	1.2	5	72.4	99.9	
5	1896	5.5	0.7	6	91.7	99.8	
6	1878	4.5	1.6	6	74.9	98.9	←
7	1829	0.9	0.3	1	87.1	96.3	
8	1892	6.5	2.4	10	65.5	99.6	←
9	1790	3	1.8	5	59.8	94.3	
10	1849	3.9	1.7	5	78	97.4	
11	1652	1.2	1.2	3	39	87	←
12	1806	3.3	1.8	5	65.1	95.1	
13	1811	3	1.7	5	59.4	95.4	←
14	1882	2	1	3	66.7	99.1	
15	1718	0.5	0.9	2	24.3	90.5	
16	1601	1.2	1.7	4	29.8	84.3	←
17	1585	0.9	1	2	44.3	83.5	
18	1642	1.4	1.3	3	46.7	86.5	
19	1738	1.2	1.7	4	31	91.5	

GCSE Mathematics Unit 3 4353-01

6. *You will be assessed on the quality of your written communication in this question.*

Jane has £15 to spend on buying packets of biscuits.
A packet of biscuits costs 89p.

She buys as many packets of biscuits as possible.

How many packets of biscuits does she buy and what change does she receive?
Show all your working. [6]

....

....

....

....

....

....

....

....

....

....

....

....

(4353-01)

6. *You will be assessed on the quality of your written communication in this question.*

Jane has £15 to spend on buying packets of biscuits.
A packet of biscuits costs 89p.

She buys as many packets of biscuits as possible.

How many packets of biscuits does she buy and what change does she receive?
Show all your working. [6]

$0.89p \times 10 = £8.90$

$\div 2 = £4.45 = 5$

$£8.90 + 4.45 = £13.35$

$+ 89 \quad (1)$

$£14.24$

She can buy up to 16 packets of biscuits and will receive 76p change.

6. *You will be assessed on the quality of your written communication in this question.*

Jane has £15 to spend on buying packets of biscuits.
A packet of biscuits costs 89p.

She buys as many packets of biscuits as possible.

How many packets of biscuits does she buy and what change does she receive?
Show all your working. [6]

$$0.89p \times 10 = £8.90$$
$$\div 2 = £4.45 = 5$$

$$£8.90 + 4.45 = £13.35$$
$$+ 89 \quad (1)$$
$$£14.24$$

She can buy up to 16 packets of biscuits and will receive 76p change.

6. *You will be assessed on the quality of your written communication in this question.*

Jane has £15 to spend on buying packets of biscuits.
A packet of biscuits costs 89p.

She buys as many packets of biscuits as possible.

How many packets of biscuits does she buy and what change does she receive?
Show all your working.   [6]

Jane has £15 to spend.
Packets of biscuits cost 89p.

89p × 10 = £8.90
89p × 15 = £13.35
89p × 16 = £14.24

Jane can buy 16 packets of biscuits
for £15 and recieve 0.76p change.

6. *You will be assessed on the quality of your written communication in this question.*

Jane has £15 to spend on buying packets of biscuits.
A packet of biscuits costs 89p.

She buys as many packets of biscuits as possible.

How many packets of biscuits does she buy and what change does she receive?
Show all your working.   [6]

Jane has £15 to spend.
Packets of biscuits cost 89p.

89p × 10 = £8.90
89p × 15 = £13.35
89p × 16 = £14.24

Jane can buy 16 packets of biscuits
for £15 and recieve 0.76p change.

6. You will be assessed on the quality of your written communication in this question.

Jane has £15 to spend on buying packets of biscuits.
A packet of biscuits costs 89p.

She buys as many packets of biscuits as possible.

How many packets of biscuits does she buy and what change does she receive?
Show all your working. [6]

89p = £0.89

Janes £15 ÷ cost of a pack of biscuits
£15 ÷ £0.89 = 16 packs of biscuits

16 packs of biscuits × £0.89
= £14.24

Change recieved
£15 - £14.24 = £0.76

Janes gets 16 packs of biscuits with
£0.76 change.

6. *You will be assessed on the quality of your written communication in this question.*

Jane has £15 to spend on buying packets of biscuits.
A packet of biscuits costs 89p.

She buys as many packets of biscuits as possible.

How many packets of biscuits does she buy and what change does she receive?
Show all your working. [6]

89p = £0.89

Janes £15 ÷ cost of a pack of biscuits
£15 ÷ £0.89 = 16 packs of biscuits

16 packs of biscuits × £0.89
= £14.24

Change recieved
£15 - £14.24 = £0.76

Janes gets 16 packs of biscuits with
£0.76 change.

8b

(ii) Midday temperature readings were also recorded on the first day of each month in Paris.

The mean was found to be 15·8°C and the range was 29°C.

Use the mean and range to compare the temperatures recorded in Cardiff and Paris.   [2]

....

....

....

....

....

....

© WJEC CBAC Ltd.   (4353-01)   **Turn over.**

8b

	Cardiff	Paris
Mean midday temperature (°C)	~~9 16 11~~ 10·5	15·8
Range of midday temperatures (°C)	20	29

(ii) Midday temperature readings were also recorded on the first day of each month in Paris.

The mean was found to be 15·8°C and the range was 29°C.

Use the mean and range to compare the temperatures recorded in Cardiff and Paris. [2]

The mean difference in Paris is 5·3°c higher than in Cardiff
The range is 9°C higher in Paris compared to Cardiff

	Cardiff	Paris
Mean midday temperature (°C)	9̶/̶1̶6̶/̶1̶1 10·5	15·8
Range of midday temperatures (°C)	20	29

(ii) Midday temperature readings were also recorded on the first day of each month in Paris.

The mean was found to be 15·8°C and the range was 29°C.

Use the mean and range to compare the temperatures recorded in Cardiff and Paris. [2]

The mean difference in Paris is 5·3°c higher than in Cardiff
The range is 9°C higher in Paris compared to Cardiff

Qu 8 (bii)

(ii) Midday temperature readings were also recorded on the first day of each month in Paris.

The mean was found to be 15·8°C and the range was 29°C.

Use the mean and range to compare the temperatures recorded in Cardiff and Paris. [2]

the mean daily tempiture had a diffrence of 5.1 and a ranged diffrence of 9 showing Paris maybe hotter but Cardiff had a more castant temp tempitve.

Qu 8 (bii)

(ii) Midday temperature readings were also recorded on the first day of each month in Paris.

The mean was found to be 15·8°C and the range was 29°C.

Use the mean and range to compare the temperatures recorded in Cardiff and Paris.

[2]

the mean daly tempiture had a diffrence of 5.1 and a range diffrence of 9 showing Paris maybe hotter but Cardiff had a more consdent beep tempitve.

Qu 8bii

	Cardiff	Paris
Mean midday temperature (°C)	10. 5	15·8
Range of midday temperatures (°C)	20	29

(ii) Midday temperature readings were also recorded on the first day of each month in Paris.

The mean was found to be 15·8°C and the range was 29°C.

Use the mean and range to compare the temperatures recorded in Cardiff and Paris. [2]

Paris' mean midday temperature is 5.3°C warmer than Cardiff

Paris' range of midday temperatures is 9°C warmer than ~~Cardi~~ Cardiff

Qu 8bii

	Cardiff	Paris
Mean midday temperature (°C)	10. 5	15·8
Range of midday temperatures (°C)	20	29

(ii) Midday temperature readings were also recorded on the first day of each month in Paris.

The mean was found to be 15·8°C and the range was 29°C.

Use the mean and range to compare the temperatures recorded in Cardiff and Paris. [2]

Paris' mean midday temperature is 5.3°C warmer than Cardiff

Paris' range of midday temperatures is 9°C warmer than ~~Cardiff~~ Cardiff

11. A jug holds one and a half litres of water when full.

A tank has dimensions 25 cm by 24 cm by 20 cm.

24 cm

20 cm

25 cm

Diagram not drawn to scale

How many full jugs of water will it take to fill the tank? [3]

....

....

....

....

....

(4353-01)

11. A jug holds one and a half litres of water when full.

A tank has dimensions 25 cm by 24 cm by 20 cm.

24 cm

20 cm
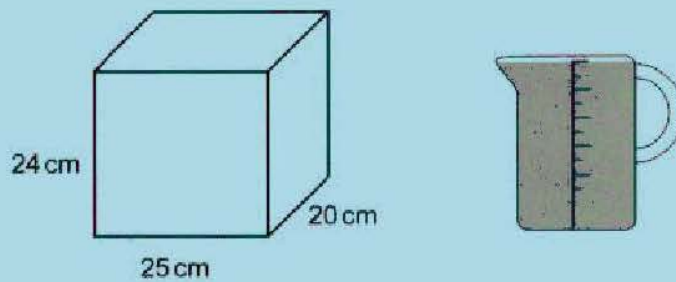
25 cm

Diagram not drawn to scale

How many full jugs of water will it take to fill the tank? [3]

1 litre = 100 mls

1 jug = 150 mls

☐ 25 + 20 + 25 + 20 = 70 cm × 24cm
$$= 1680 \text{ cm}^2$$

1̶5̶0̶ 1680 ÷ 150ml = 11.2

= 11 JUGS

11. A jug holds one and a half litres of water when full.
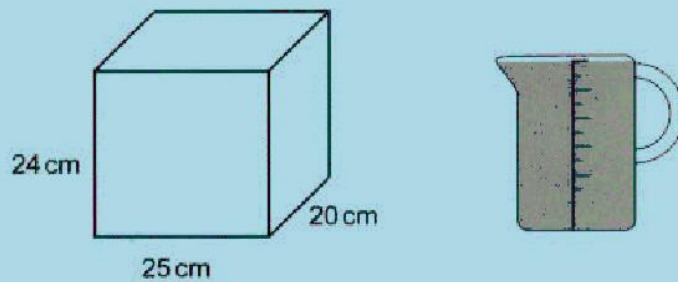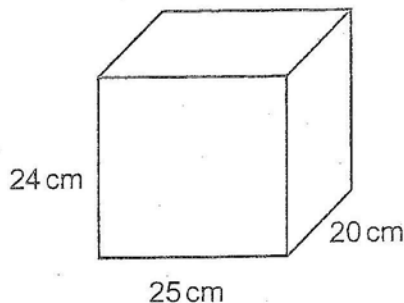A tank has dimensions 25 cm by 24 cm by 20 cm.

24 cm
20 cm
25 cm

Diagram not drawn to scale

How many full jugs of water will it take to fill the tank? [3]

1 litre = 100 mls
1 jug = 150 mls
☐ 25 + 20 + 25 + 20 = 70 cm × 24cm
= 1680 cm²

150 1680 ÷ 150ml = 11.2
= 11 jugs

1. A jug holds one and a half litres of water when full.

   A tank has dimensions 25 cm by 24 cm by 20 cm.

24 cm

20 cm

25 cm

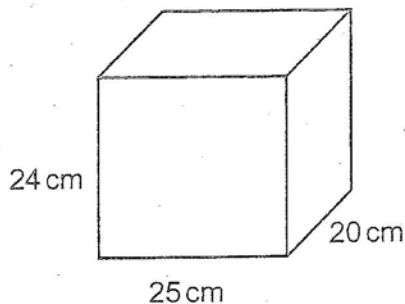*Diagram not drawn to scale*

How many full jugs of water will it take to fill the tank? [3]

$$24 \times 25 \times 20 = 12000 \, cm^3$$

$$1 \, litre = 1000 \, cm^3 \quad \frac{1}{2} \, litre = 50 \, cm^3$$

$$\cancel{12000 \div 100 = 120} \quad 12000 \div 150 = 80.$$

It needs 80 ~~lit~~ jugs of water to fill the tank.

1. A jug holds one and a half litres of water when full.
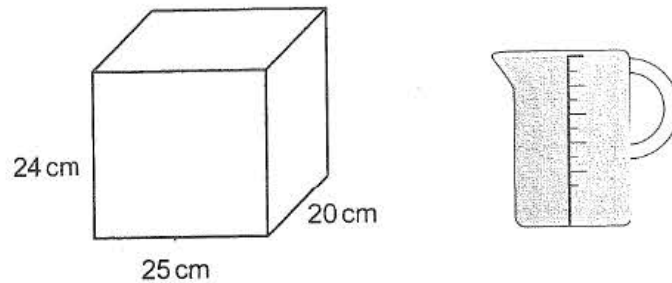
   A tank has dimensions 25 cm by 24 cm by 20 cm.

24 cm

20 cm

25 cm

Diagram not drawn to scale

How many full jugs of water will it take to fill the tank?   [3]

$$24 \times 25 \times 20 = 12000 \, cm^3$$

$$1 \text{ litre} = 1000 \, cm^3 \quad \tfrac{1}{2} \text{ litre} = 50 \, cm^3$$

~~12000 ÷ 100 = 120~~ $12000 \div 150 = 80.$

It needs 80 ~~lit~~ jugs of water
to fill the tank.

11. A jug holds one and a half litres of water when full.
A tank has dimensions 25 cm by 24 cm by 20 cm.

24 cm

20 cm

25 cm

Diagram not drawn to scale

How many full jugs of water will it take to fill the tank? [3]

Tank = 12 L of water

Jug = 1.5 L of water

12 ÷ 1.5 = 8 Jugs of water to

fill the tank

11. A jug holds one and a half litres of water when full.
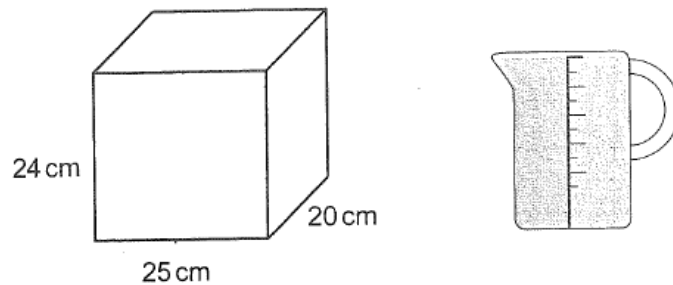A tank has dimensions 25 cm by 24 cm by 20 cm.

24 cm

20 cm

25 cm

Diagram not drawn to scale

How many full jugs of water will it take to fill the tank?   [3]

Tank = 12 ⬜ of Water
Jug = 1.5 L of water
12 ÷ 1.5 = 8 Jugs of water to
fill the tank

13. Mr Jones pays for his gas by 12 **equal** monthly payments.
Each monthly payment is worked out using the following information.

- Mr Jones uses 15 000 units of gas in a year.

- The cost of gas is 4.028 pence per unit used.

- There is a fixed charge of £6.98 **per month**.

- There is a discount of £48 per year.

Calculate Mr Jones's **monthly payment**. [5]
You must show all your working.

Turn over.

13.

13. Mr Jones pays for his gas by 12 **equal** monthly payments.
Each monthly payment is worked out using the following information.

- Mr Jones uses 15 000 units of gas in a year.
- The cost of gas is 4.028 pence per unit used.
- There is a fixed charge of £6.98 **per month**.
- There is a discount of £48 per year.

Calculate Mr Jones's **monthly payment**.   [5]
You must show all your working.

$15000 \div 12 = 1250$ units

1250 per month

$4.028 \times 1250 = 5035 \cdot 10 = £503.50$

$£503.50 + £6.98 = £510.48$

discount
£48 per year
per month
$\dfrac{48}{12} = £4$ $= £510.48 + £4$ monthly
$= £514.48$ discount

without discount $= £510.48$

13.

13. Mr Jones pays for his gas by 12 **equal** monthly payments.
Each monthly payment is worked out using the following information.

- Mr Jones uses 15 000 units of gas in a year.
- The cost of gas is 4.028 pence per unit used.
- There is a fixed charge of £6.98 **per month**.
- There is a discount of £48 per year.

Calculate Mr Jones's **monthly payment**.   [5]
You must show all your working.

15000 ÷ 12 = 1250 units

1250 per month

4.028 × 1250 = 5035 ÷ 10 = £503.50

£503.50 + £6.98 = £510.48

discount
£48 per year
per month
$\frac{48}{12}$ = £4   = £510.48 + £4 monthly discount
                = £514.48

without discount = £510.48

13. Mr Jones pays for his gas by 12 equal monthly payments.
    Each monthly payment is worked out using the following information.

- Mr Jones uses 15000 units of gas in a year.
- The cost of gas is 4.028 pence per unit used.
- There is a fixed charge of £6.98 per month.
- There is a discount of £48 per year.

Calculate Mr Jones's **monthly payment**.   [5]
You must show all your working.

15000 × 4.028 = 60420 pence per unct for a year

60420 ÷ 12 = 5035 pence a month

So 5035 pence is £503.50

£503.50 + £6.98 = £510.48 (monthy)

£510.48 × 12 = £6125.76 a year (yr)

£6125.76 - £48 = £6077.76 (after price a year)

6077.76 ÷ 12 = £506.48. (monthly)

Mr Jones's monthly payment
is £506.48

Must be consistency
year ... months

only one error

13. Mr Jones pays for his gas by 12 **equal** monthly payments.
Each monthly payment is worked out using the following information.

- Mr Jones uses 15000 units of gas in a year.
- The cost of gas is 4.028 pence per unit used.
- There is a fixed charge of £6.98 **per month**.
- There is a discount of £48 per year.

Calculate Mr Jones's **monthly payment**. [5]
You must show all your working.

$15000 \times 4.028 = 60420$ pence per
unit for a year
$60420 \div 12 = 5035$ pence a month

So 5035 pence is £503.50

£$503.50 + £6.98 = £510.48$ (monthly)

£$510.48 \times 12 = £6125.76$ a year (year)

£$6125.76 - £48 = £6077.76$ (after discount) (a year)

$6077.76 \div 12 = £506.48$ (monthly)

Mr Jones's monthly payment
is £506.48

Must be consistency
year   month   only one error

13. Mr Jones pays for his gas by 12 **equal** monthly payments.
Each monthly payment is worked out using the following information.

- Mr Jones uses 15 000 units of gas in a year.
- The cost of gas is 4.028 pence per unit used.
- There is a fixed charge of £6.98 **per month**.
- There is a discount of £48 per year.

Calculate Mr Jones's **monthly payment**. [5]
You must show all your working.

15,000 units used at 4.028 pence per unit

Total cost for units = 15000 × 0.04028 =
£604.20 per year for units

£6.98 charge per month = £83.76

$$\begin{array}{r} £604.20 \\ +\quad 83.76 \\ \hline £687.96 \end{array}$$

$$\begin{array}{r} -\quad 48 \\ \hline £639.96 \end{array}$$ - discount for year

= Total cost for Whole year

$$\frac{639.96}{12}$$ - Number of months = £53.33

Mr Jones pays £53.33 as a monthly Payment For his gas.

13. Mr Jones pays for his gas by 12 **equal** monthly payments.
Each monthly payment is worked out using the following information.

- Mr Jones uses 15 000 units of gas in a year.
- The cost of gas is 4.028 pence per unit used.
- There is a fixed charge of £6.98 **per month**.
- There is a discount of £48 per year.

Calculate Mr Jones's **monthly payment**. [5]
You must show all your working.

15,000 units used at 4.028 pence per unit

Total cost for units = 15000 × 0.04028 =
£604.20 per year for units

£6.98 charge per month = £83.76

£604.20
+   83.76
£687.96
-    48   - discount for year
£639.96   = Total cost for Whole
                        Year

639.96
─────   - Number of months = £53.33
  12

Mr Jones pays £53.33 as a monthly
Payment for his gas.

16. Two brothers, Gethin and David, share a sum of money in the ratio 2:7.
David gets £30 more than Gethin. Calculate how much money the brothers share. [4]

....

....

....

....

....

....

....

....

16. Two brothers, Gethin and David, share a sum of money in the ratio 2 : 7.
David gets £30 more than Gethin. Calculate how much money the brothers share. [4]

30   un $\frac{2 : 7}{9}$

30 ÷ 9 = 3.3

2 × 3.3 : 7 × 3.3

£ 6.06 ; £ 23.01

16. Two brothers, Gethin and David, share a sum of money in the ratio $2:7$.
David gets £30 more than Gethin. Calculate how much money the brothers share. [4]

$30 \quad \text{in} \quad \dfrac{2:7}{9}$

$30 \div 9 = 3.3$

$2 \times 3.3 \quad : \quad 7 \times 3.3$

£6.06 : £23.01

16. Two brothers, Gethin and David, share a sum of money in the ratio $2:7$.
David gets £30 more than Gethin. Calculate how much money the brothers share. [4]

$$5 = 30$$
$$1 = 30 \div 5 = 6$$
$$2 \times 6 = 12$$
$$7 \times 6 = 42$$

£12 : £42

Gethin = £12   David = £42

16. Two brothers, Gethin and David, share a sum of money in the ratio 2:7.
David gets £30 more than Gethin. Calculate how much money the brothers share. [4]

$$5 = 30$$
$$1 = 30 \div 5 = 6$$
$$2 \times 6 = 12$$
$$7 \times 6 = 42$$

£12 : £42

Gethin = £12   David = £42

16. Two brothers, Gethin and David, share a sum of money in the ratio 2:7. David gets £30 more than Gethin. Calculate how much money the brothers share. [4]

$$2 + 7 = 9$$

$$7 - 2 = 5.$$

$$5 = £30 \qquad 30 \div 5 = 6$$

Gethin gets $= £(6 \times 2) = £12.$

David gets $= 12 + 30 = £42$

$$£42 + £12 = £54.$$

$$6 \times 9 = £54.$$

16. Two brothers, Gethin and David, share a sum of money in the ratio $2:7$.
David gets £30 more than Gethin. Calculate how much money the brothers share. [4]

$$2 + 7 = 9$$

$$7 - 2 = 5.$$

$$5 = £30 \qquad 30 \div 5 = 6$$

Gethin gets $= £(6 \times 2) = £12.$

David gets $= 12 + 30 = £42$

$$£42 + £12 = £54.$$

$$6 \times 9 = £54$$