Please write clearly in block capitals.

Centre number | | | | | | Candidate number | | | | |

Surname _____

Forename(s) _____

Candidate signature _____

GCSE MATHEMATICS

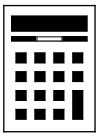
H

Higher Tier Paper 2 Calculator

Thursday 8 June 2017 Morning Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:
- a calculator
- mathematical instruments.



Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 80.
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.

Advice
- In all calculations, show clearly how you work out your answer.

For Examiner's Use	
Pages	Mark
2–3	
4–5	
6–7	
8–9	
10–11	
12–13	
14–15	
16–17	
18–19	
20–21	
22–23	
24–25	
26–27	
TOTAL	

Please note that these worked solutions have neither been provided nor approved by AQA and may not necessarily constitute the only possible solutions. Please refer to the original mark schemes for full guidance.

Any writing in blue indicates what must be written in order to answer the questions and get the marks. The worked solutions have been designed to show the smallest amount of work which needs to be done to answer the question.

Anything written in green in a cloud doesn't have to be written in the exam.

Anything written in orange in a rectangle doesn't have to be written in the exam and is there to show what should be put into a calculator or measured using a ruler or protractor.

If you find any mistakes or have any requests or suggestions, please send an email to curtis@cgmaths.co.uk

.CG Maths.

Answer **all** questions in the spaces provided

1 Circle the decimal that is closest in value to $\frac{39}{800}$

[1 mark]

0.04 8.75×10^{-3} | 0.048 7.5×10^{-4} | **0.049** -2.5×10^{-4} | 0.05 -1.25×10^{-3}

These are the results of subtracting each number from 39/800. 0.049 is closest as -2.5×10^{-4} has the smallest magnitude (size ignoring any negatives)

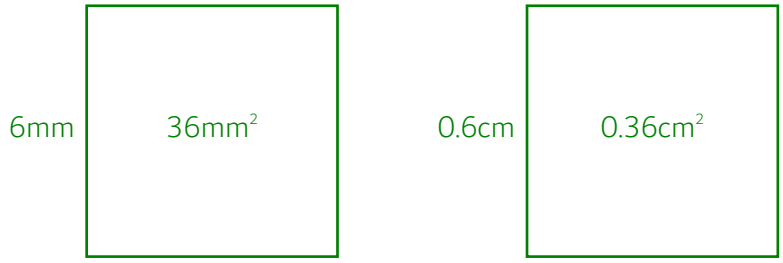
2 Circle the area that is equal to 36 mm^2

[1 mark]

360 cm^2 | 3600 cm^2 | 3.6 cm^2 | **0.36 cm^2**

There are 10mm in a cm so dividing by 10 converts mm into cm.
However this is a squared unit so the effect will be squared.
$36 \div 10^2 = 0.36$

We could also test it on a square to see what would happen.



3 *A* is (2, 12) and *B* is (8, 2)

Circle the midpoint of *AB*.

[1 mark]

(3, 5) (4, 6) (5, 7) (6, 10)

The midpoint will be halfway between the x-coordinates and halfway between the y-coordinates. The mean finds the midpoint. The mean of the x-coordinates is (2 + 8)/2 = 5, so the x-coordinate must be 5

4 Here is a sequence.

90 82 74 66 58

Circle the expression for the nth term of the sequence.

[1 mark]

$n - 8$ $98 - 8n$ $8n + 82$ $8n - 98$

The sequence goes down by 8 each time so the coefficient of n (the number before n) must be -8

Turn over for the next question

4

5 A code has 4 digits.

Each digit is a number from 0 to 9

Digits may be repeated.

The code starts 5 4 1

5	4	1	

5 (a) Amy knows the last digit is odd but **not** 7

She chooses a different odd number at random.

What is the probability that she chooses the correct number?

[1 mark]

There are 4 possible digits (1, 3, 5, 9). Out of these, 1 of them is correct

Answer $\frac{1}{4}$

5 (b) The 4-digit code is changed to an even number.

The first digit is 3

How many possible codes are there?

[2 marks]

$1 \times 10 \times 10 \times 5$

Using the product rule for counting. Multiplying the number of outcomes for each digit gives the total number of outcomes. There is only 1 possibility for the first digit as it must be 3. There are 10 possibilities for the second and third digit as they can be any single digit (there are 10 including 0). There are 5 possibilities for the fourth digit as it must end in a 0, 2, 4, 6, 8 in order to be even.

Answer 500

6 (a) Complete the table of values for $y = x^2 - x - 2$

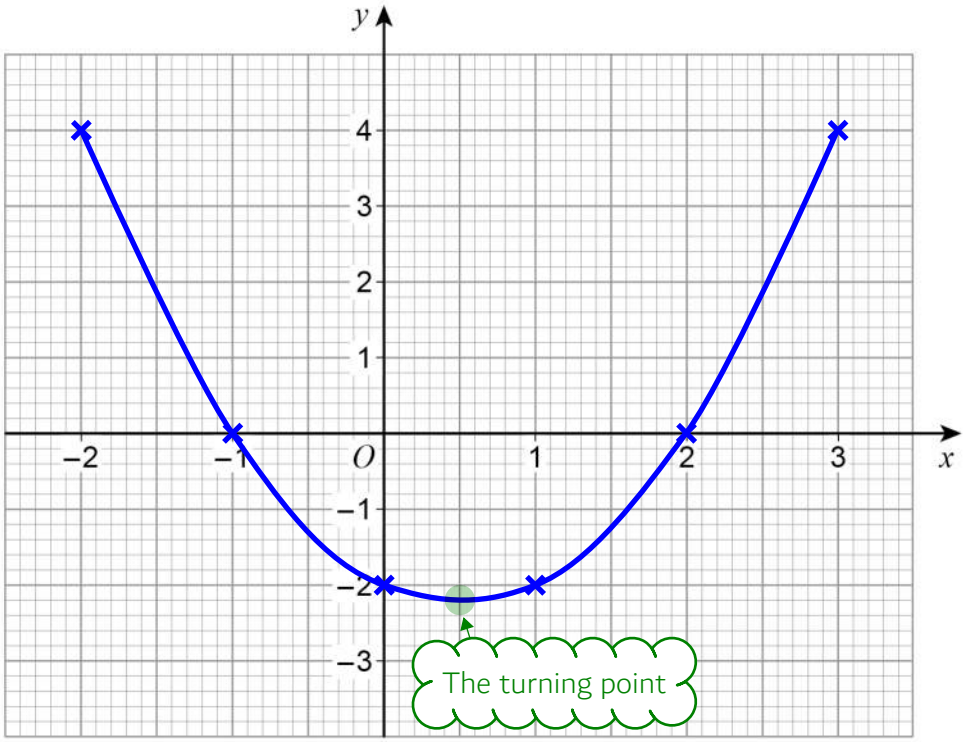
[2 marks]

x	–2	–1	0	1	2	3
y	4	0	–2	–2	0	4

Using table mode on the calculator. Set f(x) = x^2 - x - 2. Start: - 2. End: 3. Step: 1

6 (b) Draw the graph of $y = x^2 - x - 2$ for values of x from –2 to 3

[2 marks]



The turning point

Plotting the points then joining them up with a curve

6 (c) Write down the x-coordinate of the turning point of the graph.

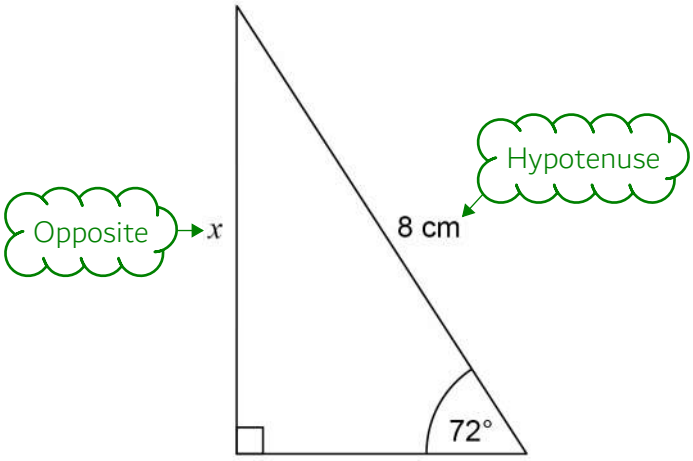
[1 mark]

Quadratics are symmetrical so the turning point must be halfway between 0 and 1.

Answer 0.5

8

7 Use trigonometry to work out the length x.



[2 marks]

SOH CAH TOA

Writing SOH CAH TOA as formula triangles. Ticking O and H as the opposite and hypotenuse are involved. There are two ticks on the SOH formula triangle so this one can be used

Sin72X8

Covering O in the formula triangle finds that opposite = sin of the angle x hypotenuse

Answer 7.6 cm

8 Lily goes on a car journey.

For the first 30 minutes her average speed is 40 miles per hour.

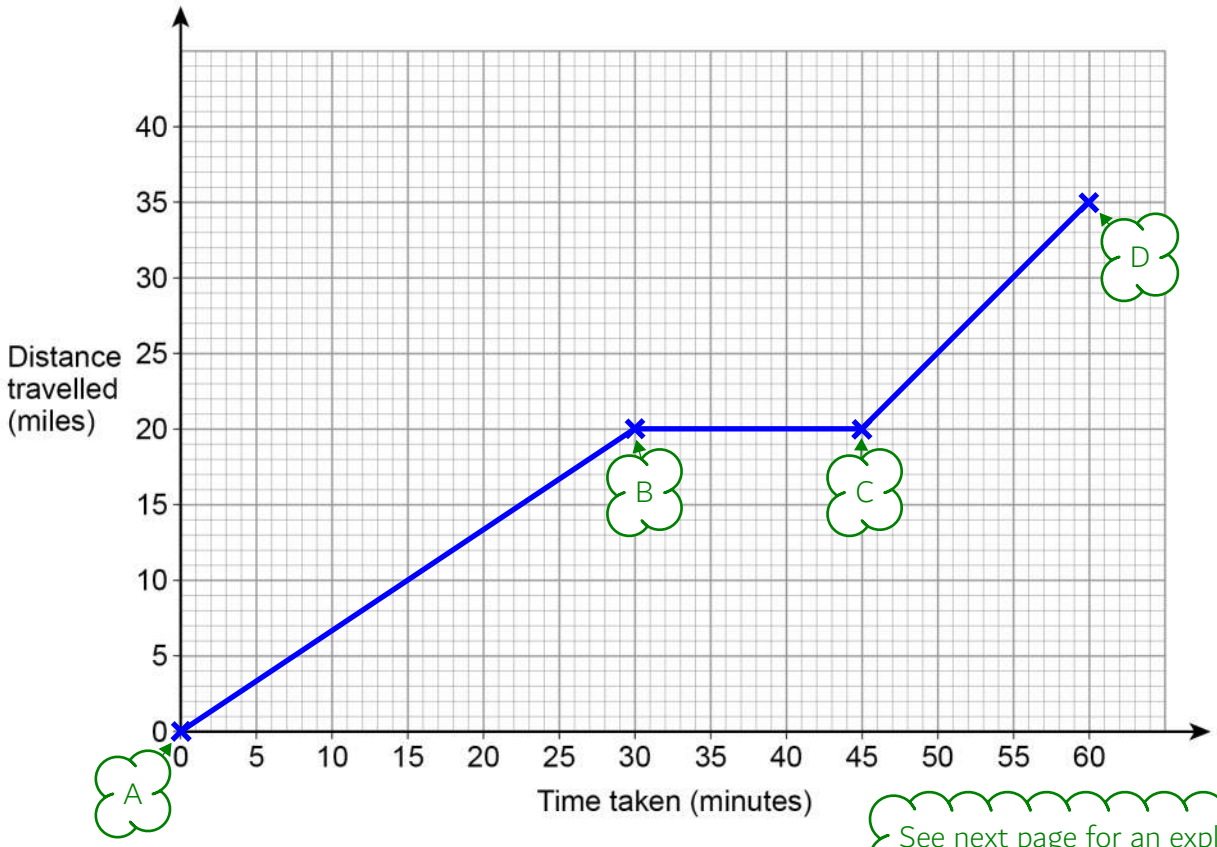
She then stops for 15 minutes.

She then completes the journey at an average speed of 60 miles per hour.

The total journey time is 1 hour.

8 (a) Draw a distance-time graph for her journey.

[3 marks]



See next page for an explanation

8 (b) Write down the average speed for the total journey.

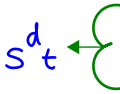
[1 mark]

35 miles was travelled in an hour so the average speed must be 35 miles per hour

Answer 35 mph

Turn over for the next question

6



Writing the formula triangle for distance, speed, time. Covering d finds that distance = speed x time

A: The distance travelled at the very start of the journey must be 0 miles.

B: For the first 30 minutes her average speed is 40 miles per hour. The speed is in miles per hour so the time in minutes needs to be converted into hours to be compatible with it. 30 minutes is 1/2 an hour. This could be worked out by using the fact there are 60 minutes in an hour and dividing the 30 by 60. Distance = speed x time = 40 x 1/2 = 20 miles.

C: She then stops for 15 minutes. So the distance travelled stays the same for 15 minutes. 30 + 15 = 45 minutes.

D: She then completes the journey at an average speed of 60 miles per hour. The total journey time is 1 hour. An hour is 60 minutes and 60 subtract the 45 minutes already done leaves 15 minutes for the rest of the journey. The speed is in miles per hour so the time in minutes needs to be converted into hours to be compatible with it. 15 minutes is 1/4 an hour. This could be worked out by using the fact there are 60 minutes in an hour and dividing the 15 by 60. Distance = speed x time = 60 x 1/4 = 15 miles. This is another 15 miles in addition to the 20 miles already travelled and 20 + 15 = 35 miles.

Joining up all the points with straight lines competes the graph

9 The table shows information about some CDs.

Type	Rock	Pop	Jazz
Number of CDs	2	x	$2x + 5$

A CD is chosen at random.

The probability it is **rock** is $\frac{1}{20}$

Work out the probability it is jazz.

[4 marks]

1/20 of the CDs must be Rock and there are 2 of them. The opposite of doing 1/20 is to multiply by 20 so multiplying the 2 Rock CDs by 20 works out that there are 40 CDs in total

$2 \times 20 = 40$

Adding all of the expressions for the number of Rock, Pop and Jazz CDs to express the total number of CDs in terms of x

$2 + x + 2x + 5$

Simplifying the expression by collecting like terms. This must be equal to the 40 CDs

$3x + 7 = 40$

Solving the equation to find x. First subtracting 7 from both sides to get the x term on its own

$3x = 33$

Dividing both sides by 3 gets x on its own

$x = 11$

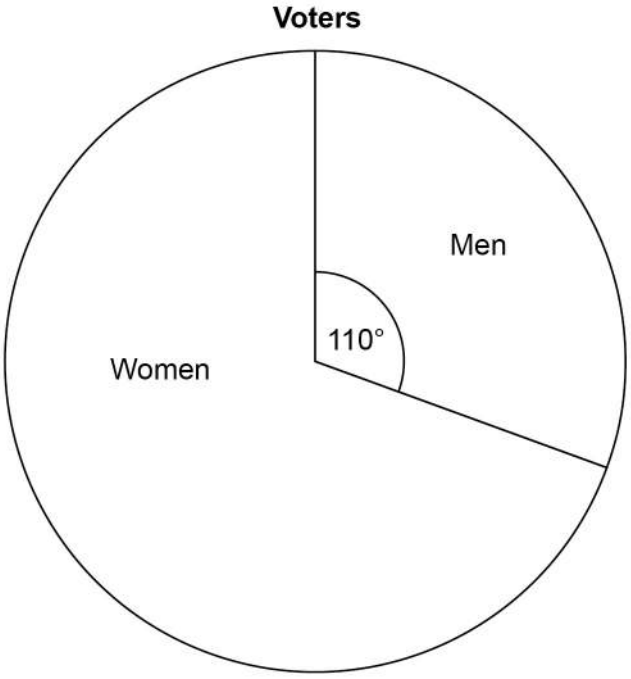
Substituting 11 for x in the expression of the number of Jazz CDs finds that there are 27 of them

$2 \times 11 + 5$

Answer $\frac{27}{40}$

27 out of the 40 CDs are Jazz

10 The pie chart shows information about voters in an election.



3360 **more** women voted than men.

Work out the total number of voters.

[3 marks]

360−110 ← There are 360 degrees in total in a pie chart. Subtracting the 110 degrees for the men from this works out that there are 250 degrees for the women

250−110 ← Subtracting the 110 degrees for men from the 250 degrees for women works out that 140 degrees represent the 3360 more women than men

3360÷140 ← Dividing the 3360 by the 140 degrees which represent it works out that 1 degree represents 24 voters

24×360 ← Multiplying the 24 which is represented by 1 degree by the total 360 degrees works out that there are 8640 voters in total

Answer 8640

7

11 Write these numbers in **descending** order.

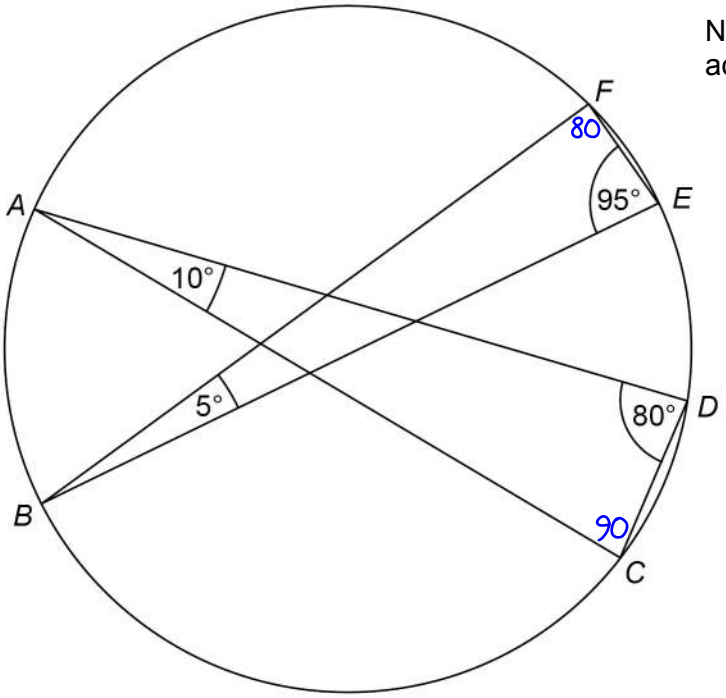
9563 9.56×10^3 9.56×3^{10}

[2 marks]

Putting them into the calculator to convert them to ordinary numbers finds that $9.56 \times 10^3 = 9560$ and $9.56 \times 3^{10} = 564508.44$. Descending order means to put them from largest to smallest

Answer 9.56×3^{10} , 9563 , 9.56×10^3

12 *A*, *B*, *C*, *D*, *E* and *F* are points on a circle.



Circle the line that is a diameter of the circle.

[1 mark]

BE *AD* *AC* *BF*

There are 180 degrees in a triangle. Subtracting the other angles from 180 leaves the missing angles. 180 - 95 - 5 = 80 and 180 - 80 - 10 = 90. The angle in a semicircle is 90 degrees, so AD must be the diameter

3

13 To make one cheese sandwich, Gina uses one bread roll and two cheese slices.

Pack of 15 bread rolls	Pack of 20 cheese slices
£1.88	£2.15

She is going to buy enough packs to

have exactly twice as many cheese slices as bread rolls

make **more than** 100 cheese sandwiches.

Work out the least amount she can spend.

[4 marks]

100÷15 ← Dividing 100 sandwiches by the 15 bread rolls in each pack works out that there needs to be more than 6.6̇ packs of bread rolls in order to make more than 100 cheese sandwiches

7×15 ← There could be 7 packs of bread rolls. Multiplying the 7 packs by the 15 in each pack works out that there would be 105 bread rolls

105×2 ← Multiplying the 105 bread rolls by 2 (as there must be exactly twice as many cheese slices as bread rolls) works out that there would need to be 210 cheese slices

210÷20 ← Dividing the 210 cheese slices by the 20 in each pack works out that there would be 10.5 packs, which is not possible as there must be a whole number of packs

8×15 ← Next trying 8 packs of bread rolls. Multiplying the 8 packs by the 15 in each pack works out that there would be 120 bread rolls

120×2 ← Multiplying the 120 bread rolls by 2 (as there must be exactly twice as many cheese slices as bread rolls) works out that there would need to be 240 cheese slices

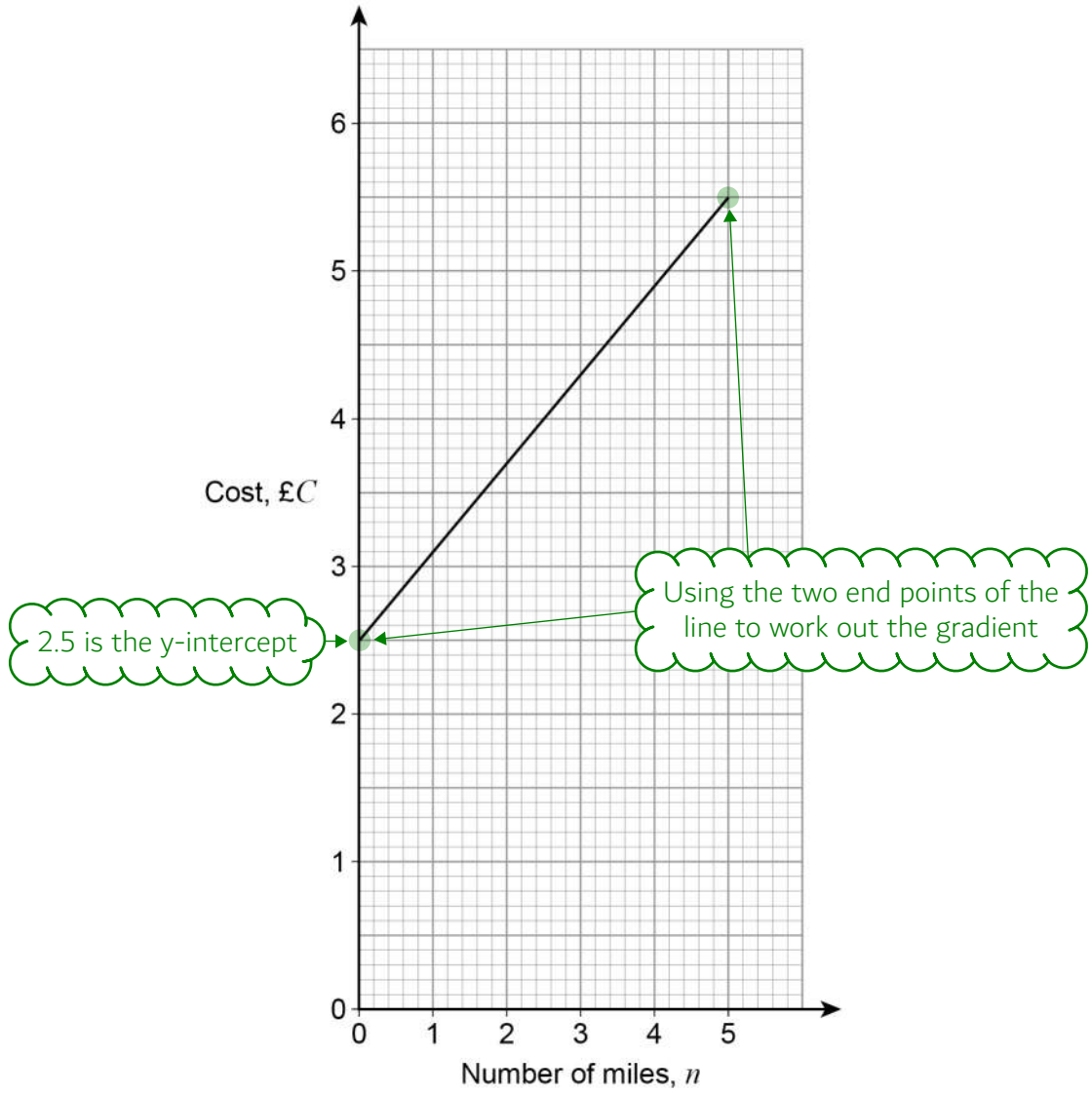
240÷20 ← Dividing the 240 cheese slices by the 20 in each pack works out that there would be 12 packs of cheese slices

8×1.88+12×2.15 ← Multiplying the 8 packs needed by the £1.88 cost of a pack of bread rolls expresses the cost of the packs of bread rolls. Multiplying the 12 packs needed by the £2.15 cost of a pack of cheese slices expresses the cost of the packs of cheese slices. Adding these together gives the total amount spent

Answer £ 40.84

This must be the least amount she can spend as if there were more pack it would be more expensive

14 The graph shows the cost of some taxi journeys.



Work out a formula for C in terms of n.

[3 marks]

$\frac{5.5-2.5}{5-0}$

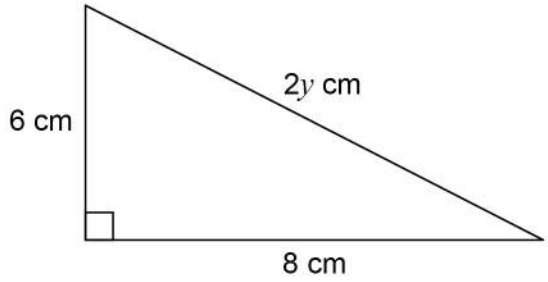
Gradient = (change in y)/(change in x).
Change in y = (y-coordinate of the second point) - (y-coordinate of the first point).
Change in x = (x-coordinate of the second point) - (x-coordinate of the first point).
So the gradient is 0.6

Answer $C=0.6n+2.5$

The general equation of a straight line is y = mx + c, where m is the gradient and c is the y-intercept.
y needs to be changed for C and x needs to be changed for n as these are the variables given

7

15 Sami is trying to work out the exact value of y using Pythagoras' theorem.



Not drawn accurately

Here is her working.

$$(2y)^2 = 6^2 + 8^2$$

$$2y^2 = 36 + 64$$

$$2y^2 = 100$$

$$y^2 = 100 \div 2$$

$$y^2 = 50$$

$$y = \sqrt{50}$$

15 (a) What error has she made in her working?

[1 mark]

$(2y)^2 = 4y^2$ ← Both the 2 and the y should be squared

15 (b) Kai works out that $y = 5$

Mel says,

"y cannot be 5 because the hypotenuse should be the longest side and the other sides are longer than 5 cm"

Is Mel correct?

Tick a box.

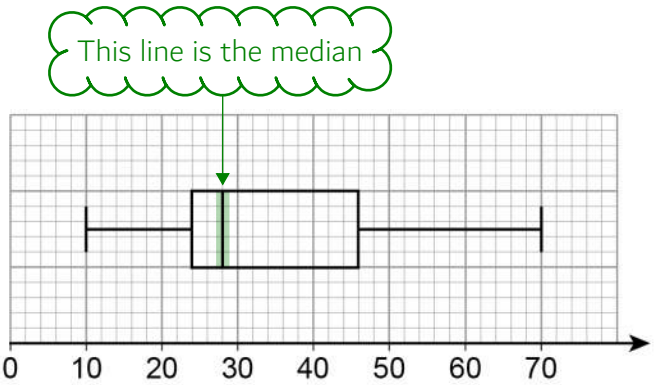
Yes ☐ No ☑

Give a reason for your answer.

[1 mark]

2y=10 ↔ The hypotenuse is 2y, not y. 10 cm is longer than the 6 cm and the 8 cm so is the longest side

16 Here is a box plot.



Circle the median value.

[1 mark]

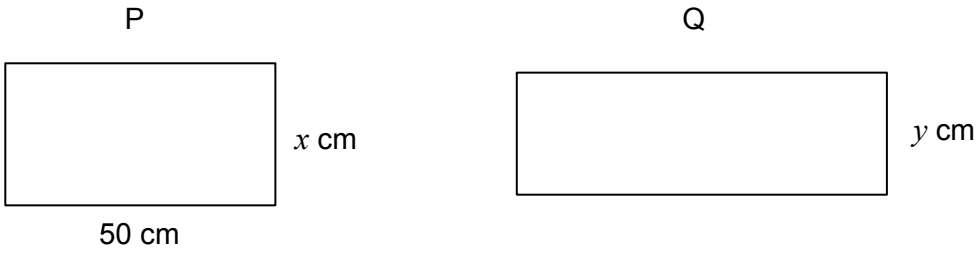
(28) 35 24 22

3

17 P is a rectangle with length 50 cm and width x cm

Q is a rectangle with width y cm

Not drawn accurately



The length of Q is 20% **more** than the length of P.

The area of Q is 10% **less** than the area of P.

Work out the ratio $x : y$

Give your answer in its simplest form.

[4 marks]

$50 \times \frac{100+20}{100} = 60$ ← 100% + 20% expresses the length of Q as a percentage of the length of P. Putting this over 100 converts it into a fraction. Multiplying the length of P by this fraction increases it by 20% and so works out that the length of Q is 60 cm

$50x \times \frac{100-10}{100}$ ← Area of rectangle = length x width so the area of P is 50x. 100% - 10% expresses the area of Q as a percentage of the area of P. Putting this over 100 converts it into a fraction. Multiplying the area of P by this fraction reduces it by 10% to 45x

$45x = 60y$ ← Area of rectangle = length x width so the area of Q is 60y. The area of P reduced by 10% must be equal to the area of Q

$\frac{60}{45} = \frac{4}{3}$ ← x could be 60 while y could be 45 as 45 x 60 = 60 x 45. Fractions simplify in a similar way to ratios and putting the 60 over the 45 simplifies it to 4/3

Answer 4 : 3

If 60/45 simplifies to 4/3, the ratio 60 : 45 must simplify to 4 : 3

18 A school has 86 teachers.

42 are male and 44 are female.

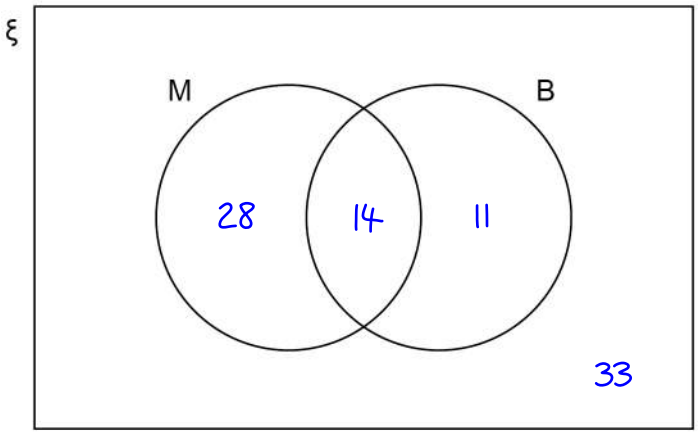
$\frac{1}{3}$ of the male teachers have blue eyes.

$\frac{1}{4}$ of the female teachers have blue eyes.

18 (a) ξ = teachers in the school

M = male teachers

B = teachers who have blue eyes



Complete the Venn diagram.

[3 marks]

$\frac{1}{3} \times 42$ ← This works out that 1/3 of the 42 male teachers is 14. So 14 male teachers have blue eyes

$42 - 14$ ← Subtracting the 14 male teachers with blue eyes from the 42 male teachers leaves 28 male teachers who do not have blue eyes

$\frac{1}{4} \times 44$ ← This works out that 1/4 of the 44 female teachers is 11. So 11 female teachers have blue eyes

$44 - 11$ ← Subtracting the 11 female teachers with blue eyes from the 44 female teachers leaves 11 female teachers who do not have blue eyes

18 (b) One teacher who has blue eyes is chosen at random.

Work out the probability that the teacher is male.

[1 mark]

$14 + 11$ ← Adding the 14 and 11 in the B ring works out that there are 25 teachers with blue eyes

Answer $\frac{14}{25}$

14 out of the 25 teachers with blue eyes are male

8

19 Rana sells 192 cakes in the ratio small : medium : large = 7 : 6 : 11

The profit for one medium cake is twice the profit for one small cake.

The profit for one large cake is three times the profit for one small cake.

Her total profit is £532.48

Work out the profit for one small cake.

[5 marks]

7+6+11 ← Adding the number of parts in the ratio works out that the 192 cakes are represented by 24 parts in total

192÷24=8 ← Dividing the 192 cakes by the 24 parts which represent them works out that 1 part of the ratio is worth 8 cakes

8×7=56 ← Multiplying the value of 1 part of the ratio by 7 works out that there were 56 small cakes

8×6=48 ← Multiplying the value of 1 part of the ratio by 8 works out that there were 48 medium cakes

8×11=88 ← Multiplying the value of 1 part of the ratio by 11 works out that there were 88 large cakes

56x+48×2x+88×3x

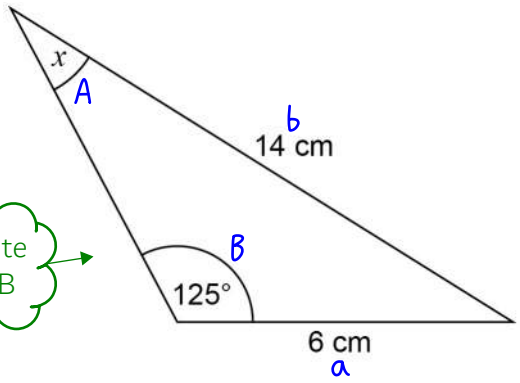
Let x be the profit for one small cake. The profit for a medium cake must be 2x as the profit for one medium cake is twice the profit for one small cake. The profit for a large cake must be 3x as the profit for one large cake is three times the profit for one small cake. Multiplying the number of cakes by the profit of each cake expresses the total profit for each type of cake. Adding these totals expresses the overall total profit for all of the cakes

416x=532.48 ← Ignoring x then putting it back in after. 56 + 48 x 2 + 88 x 3 = 416. So the total profit is 416x, which must be equal to the £532.48

Answer £ 1.28

Dividing both sides by 416 finds that x = 1.28, which is the profit of one small cake

20 Work out the size of angle x.



Not drawn accurately

Labelling the triangle. Side a is opposite angle A and side b is opposite angle B

[3 marks]

$\frac{\sin x}{6} = \frac{\sin 125}{14}$ ← There are two opposite pairs of sides and angles so the sine rule can be used. Quoting it with the angles on top: sinA/a = sinB/b. Substituting in the values

$\sin x = 0.3...$ ← Multiplying both sides by 6 to eliminate the denominator on the left

Doing the inverse sin of both sides gets x on its own. $\sin^{-1}(0.3...) = 20.55...$ Using the exact answer from before for 0.3...

Answer 20.6 degrees

Turn over for the next question

8

21 Solve $5x^2 = 10x + 4$

Give your answers to 2 decimal places.

[4 marks]

$5x^2-10x-4=0$ ← Rearranging into the quadratic form $ax^2 + bx + c = 0$ by subtracting the 10x and the 4 from both sides

$\frac{--10\pm\sqrt{(-10)^2-4\times5\times-4}}{2\times5}$ ← $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ ← Using the quadratic formula. a = 5, b = -10, c = -4

Answer 2.34, -0.34

The answers of 3.241... and -0.341... are rounded to 2 decimal places

22 A ball, dropped vertically, falls d metres in t seconds.

d is directly proportional to the square of t.

The ball drops 45 metres in the first 3 seconds.

How far does the ball drop in the **next** 7 seconds?

[4 marks]

$d = kt^2$ ← Writing the proportion as an equation. k represents a constant

$k = \frac{d}{t^2} = \frac{45}{3^2}$ ← Rearranging to find k by dividing both sides by t^2. Substituting 45 for d and 3 for t finds that k = 5

5×10^2 ← So the equation is $d = 5t^2$. The total time during the first 3 seconds then the next 7 seconds is 10 seconds. So substituting 10 for t works out that the distance travelled during these 10 second is 500 metres

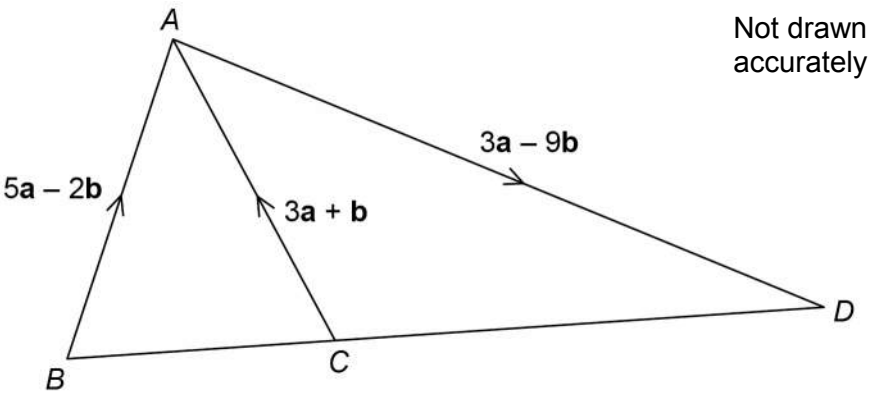
$500 - 45$ ← Subtracting the distance in the first 3 seconds from the distance in 10 seconds works out the distance in the next 7 seconds after the first 3 seconds

Answer 455 metres

Turn over for the next question

8

23



Is *BCD* a straight line?

Show working to support your answer.

[3 marks]

$\overrightarrow{BC} = 5a - 2b - 3a - b$ ← $\overrightarrow{BC} = \overrightarrow{BA} + \overrightarrow{AC}$. $\overrightarrow{AC} = -\overrightarrow{CA}$

$= 2a - 3b$ ← Simplifying by collecting like terms

$\overrightarrow{CD} = 3a + b + 3a - 9b$ ← $\overrightarrow{CD} = \overrightarrow{CA} + \overrightarrow{AD}$

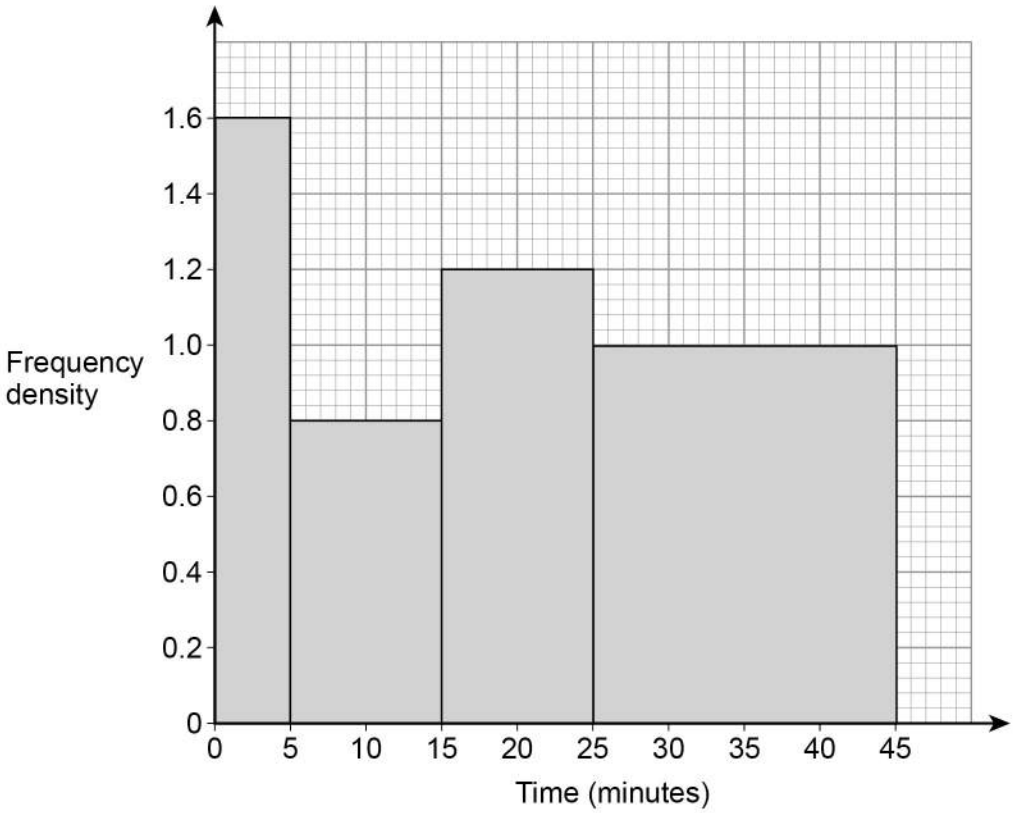
$= 6a - 8b$ ← Simplifying by collecting like terms

CD is not a multiple of BC ← $\overrightarrow{BC}$ cannot be multiplied to get $\overrightarrow{CD}$ so they are not going in the same direction so BCD is not a straight line

Answer No

24 48 students completed some homework.

This histogram shows information about the times taken.



Work out an estimate of the interquartile range.

You **must** show your working.

[4 marks]

See next page for an explanation

Answer 23 minutes

7

The area of each box gives the frequency on a histogram. Area of rectangle = base x height

$5 \times 1.6 = 8$ ← The base of the first box is 5 and the height is 1.6 so the frequency is 8

$10 \times 0.8 = 8$ ← The base of the second box is 10 and the height is 0.8 so the frequency is 8

$10 \times 1.2 = 12$ ← The base of the third box is 10 and the height is 1.2 so the frequency is 12

$20 \times 1 = 20$ ← The base of the fourth box is 20 and the height is 1 so the frequency is 20

$48 \div 4 = 12$ ← The lower quartile is roughly 1/4 through the 48 students so can be estimated be the 12th student when they are put in order

$12 - 8$ ← Counting the first 8 represented by the first box leaves another 4 to count to get to the 12th

$\frac{4}{8} \times 10$ ← 4 into the 8 in the second box is 4/8 of the way through assuming that all the times are equally spread out. Doing this fraction of the width of the box works out that it is 5 minutes in

$5 + 5 = 10$ ← Doing 5 minutes after the lowest value in the second box works out that the estimated lower quartile is 10 minutes

12×3 ← The upper quartile is roughly 3/4 through the 48 students so can be estimated be the 36th student when they are put in order

$36 - 8$ ← Counting the first 8 represented by the first box leaves another 28 to count to get to the 36th

$28 - 8$ ← Counting the next 8 represented by the second box leaves another 20 to count to get to the 36th

$20 - 12$ ← Counting the next 12 represented by the third box leaves another 8 to count to get to the 36th

$\frac{8}{20} \times 20$ ← 8 into the 20 in the fourth box is 8/20 of the way through assuming that all the times are equally spread out. Doing this fraction of the width of the box works out that it is 8 minutes in

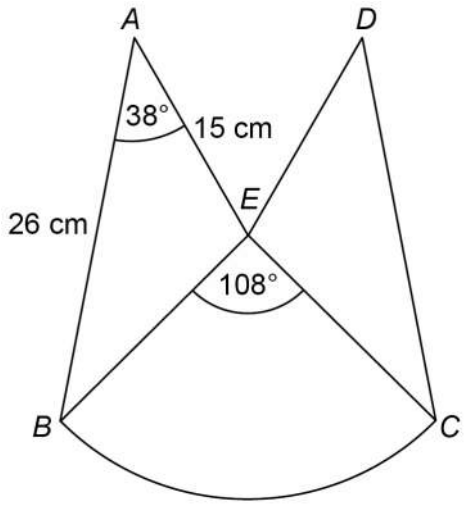
$25 + 8$ ← Doing 8 minutes after the lowest value in the fourth box works out that the estimated upper quartile is 33 minutes

$33 - 10$ ← Interquartile range = upper quartile - lower quartile

25 The diagram shows a logo.

ABE and *DCE* are congruent triangles.

BCE is a sector of a circle, centre *E*.



Not drawn accurately

Show that the area of the logo is 510 cm^2 to 2 significant figures.

[5 marks]

$\frac{1}{2} \times 26 \times 15 \times \sin 38 = 120.0... (A)$ ← Area of triangle = 1/2 x absinC, where a and b are sides and C is the angle between them. Storing the exact value as A on the calculator

$BE^2 = 26^2 + 15^2 - 2 \times 26 \times 15 \times \cos 38$ ← There are not two opposite pairs of sides and angles in the triangle so the sine rule cannot be used to work out side BE. So using the cosine rule: $a^2 = b^2 + c^2 - 2bc\cos A$. The 38 degrees must be angle A so BE must be side a as it is opposite. The 26 can be b and the 15 can be c. This works out that $BE^2 = 286.3...$

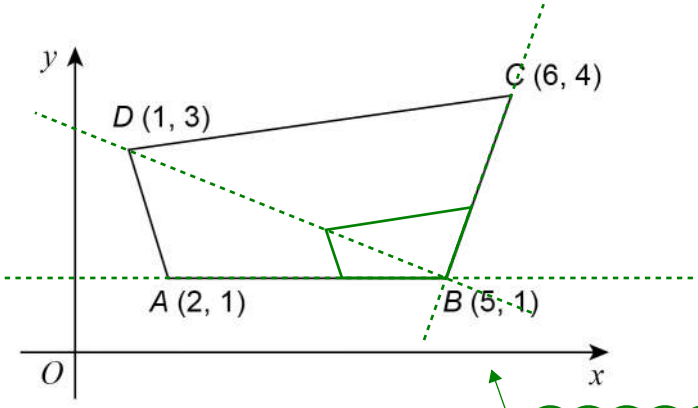
$BE = \sqrt{286.3...}$ ← Square rooting both sides finds that BE = 16.9...

$\frac{108}{360} \times \pi \times 16.9...^2$ ← Area of circle = π x $radius^2$. BE is the radius. Doing 108/360 of the area of the circle as the sector has 108 out of the total 360 degrees in total in a circle. So the area of the sector is 269.8...

$269.8... + 120.0... \times 2$ ← Adding the area of the sector and two of the triangle (using the exact value stored as A on the calculator) gives the exact area of the logo

509.9...
510 ← Writing the exact value of the area of the logo then rounding it to 2 significant figures

26 (a) A sketch of a quadrilateral *ABCD* is shown.



Not drawn accurately

The corners of the shape follow these dashed lines when enlarged

ABCD is enlarged, centre *B*, scale factor $\frac{1}{3}$

Circle the vertex that is invariant.

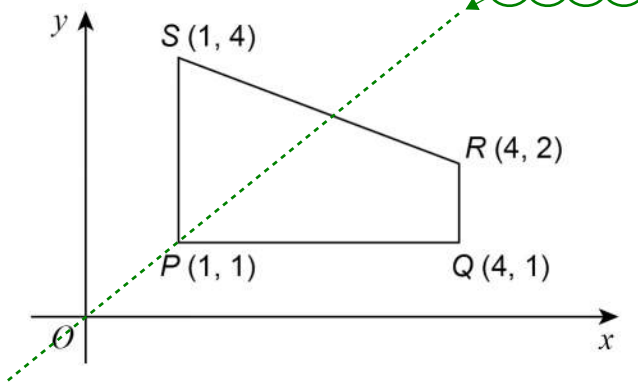
[1 mark]

A (B) *C* *D*

B does not change

26 (b) A sketch of a quadrilateral *PQRS* is shown.

This must be the line y = x as it goes through the point (1, 1), which has its y-coordinate equal to its x-coordinate



Not drawn accurately

PQRS is reflected in the line $y = x$

Circle the vertex that is invariant.

[1 mark]

(P) *Q* *R* *S*

P does not change as it is on the line

7

27 (a) $h(x) = \sqrt[3]{x}$ for all values of x

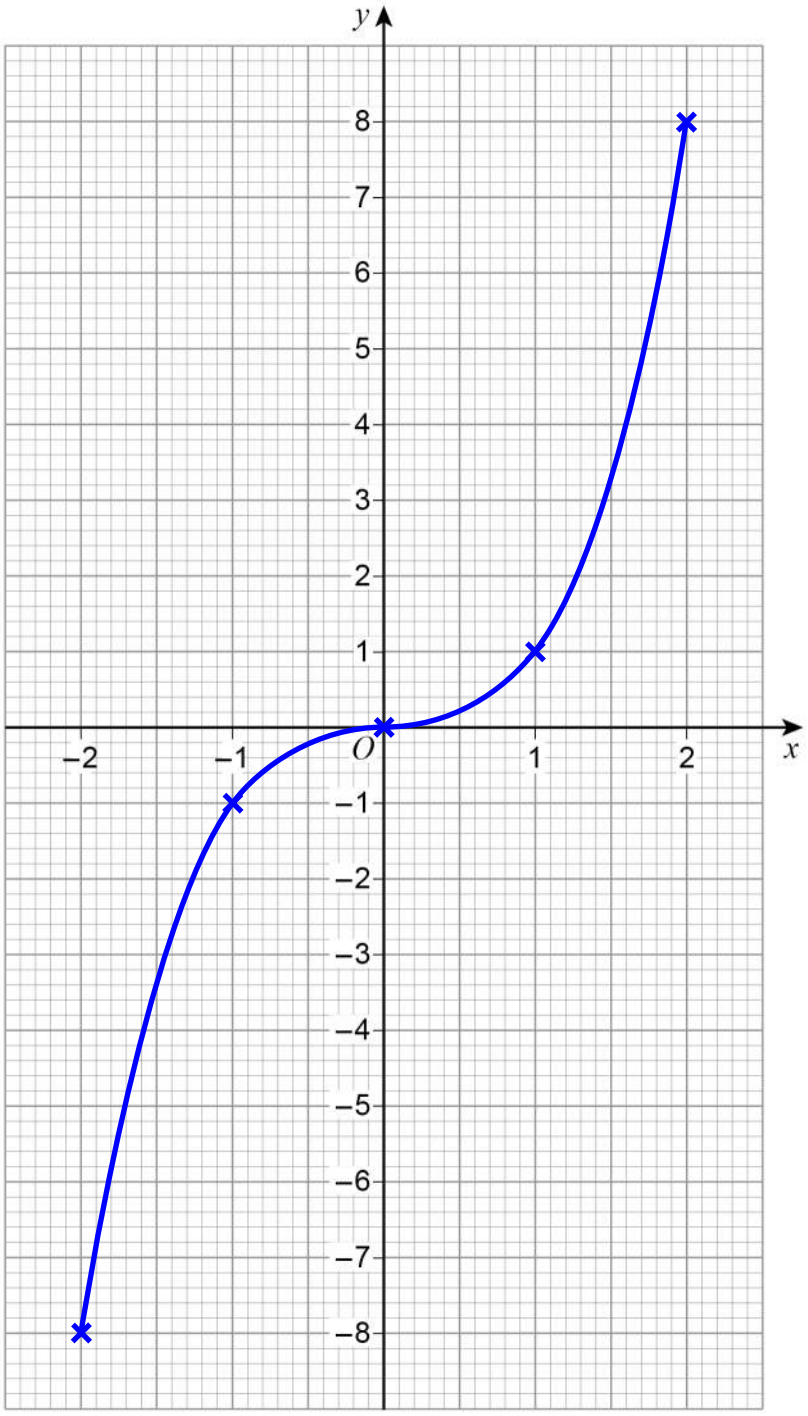
On the grid, draw the graph of the inverse function $y = h^{-1}(x)$ for $-2 \leqslant x \leqslant 2$

[2 marks]

$x = \sqrt[3]{y}$
$y = x^3$

Switching h(x) with x and x with y then rearranging to make y the subject by cubing both sides finds that $h^{-1}(x) = x^3$

Using table mode on the calculator. Set $f(x) = x^3$. Start: -2. End: 2. Step: 1. This gives a table of values which can be plotted then joined up with a curve



27 (b) For all values of x

f(x) = sin x

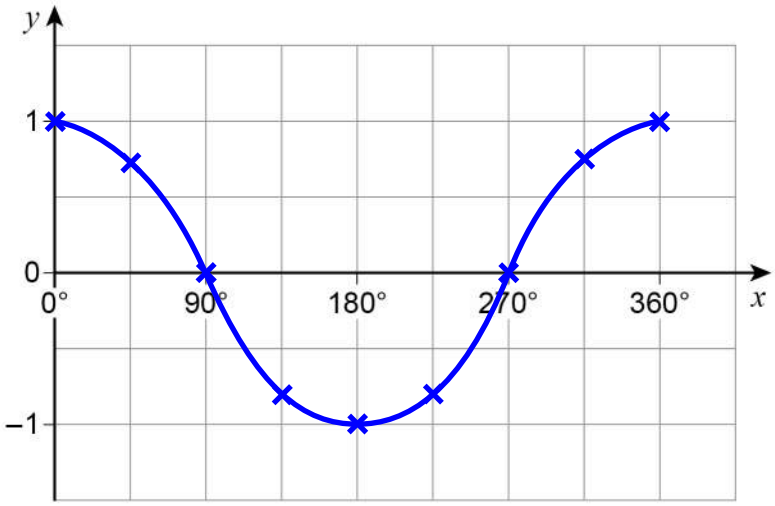
g(x) = x + 90

On the grid, draw the graph of the composite function y = fg(x) for $0° \leqslant x \leqslant 360°$

[2 marks]

$y = \sin(x + 90)$ ← The composite function fg(x) is expressed by substituting g(x) for x in f(x)

Using table mode on the calculator. Set f(x) = sin(x + 90). Start: 0. End: 360. Step: 45. This gives a table of values which can be plotted then joined up with a curve



END OF QUESTIONS

4