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| Centre No. | | | | | | Paper Reference | Surname | Initial(s) |
| Candidate No. | | | | | | 1 3 8 0 / 2 F | Correction | |
| | | | | | | | Signature | M. M Semar- |

Paper Reference(s)

1380/2F

Edexcel GCSE

Mathematics (Linear) – 1380

Paper 2 (Calculator)

Foundation Tier

Friday 11 June 2010 – Morning

Time: 1 hour 30 minutes



Examiner's use only

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Team Leader's use only

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Materials required for examination

Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Items included with question papers

Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature. Check that you have the correct question paper. Answer ALL the questions. Write your answers in the spaces provided in this question paper. **You must NOT write on the formulae page.** Anything you write on the formulae page will gain NO credit. If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. (2). There are 27 questions in this question paper. The total mark for this paper is 100. There are 24 pages in this question paper. Any blank pages are indicated. **Calculators may be used.** If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Advice to Candidates

Show all stages in any calculations. Work steadily through the paper. Do not spend too long on one question. If you cannot answer a question, leave it and attempt the next one. Return at the end to those you have left out.

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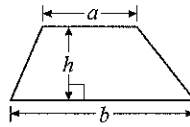
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GCSE Mathematics (Linear) 1380

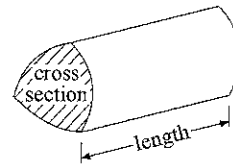
Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Area of trapezium = $\frac{1}{2}(a+b)h$



Volume of prism = area of cross section \times length



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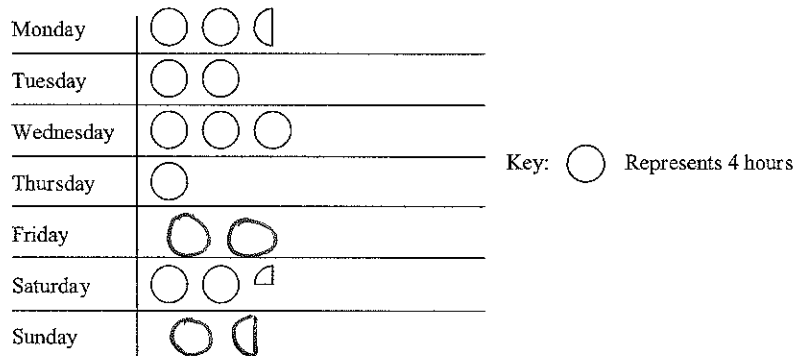
Answer ALL TWENTY SEVEN questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. Here is an incomplete pictogram.

It shows the numbers of hours of sunshine on Monday, Tuesday, Wednesday, Thursday and Saturday of one week.



- (a) Write down the number of hours of sunshine on Wednesday.

$$4 \times 3$$

12 hrs.

(1)

- (b) Write down the number of hours of sunshine on Monday.

$$4 \times 2 + 2$$

10 hrs

(1)

On Friday, there were 8 hours of sunshine.

- (c) Show this on the pictogram.

(1)

On Sunday, there were 6 hours of sunshine.

- (d) Show this on the pictogram.

(1)

Q1

(Total 4 marks)



3

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2. (a) Write down **two pounds eighty pence** in figures.

£ 2.80
(1)

(b) Write down **two pounds and six pence** in figures.

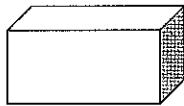
£ 2.06
(1)

Q2

(Total 2 marks)

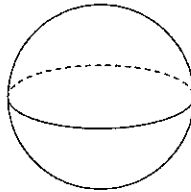
3. (a) Write down the mathematical name for each of these 3-D shapes.

(i)



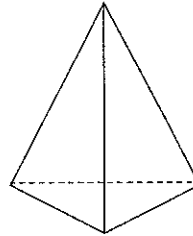
(i) Cuboid

(ii)



(ii) Sphere

(iii)



(iii) Pyramid

(3)

(b) Here is a solid prism made from centimetre cubes.

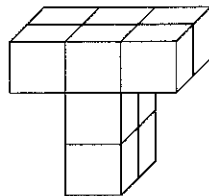
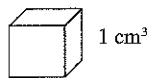


Diagram NOT accurately drawn



Find the volume of the prism.

5 x 2

10 cm³
(1)

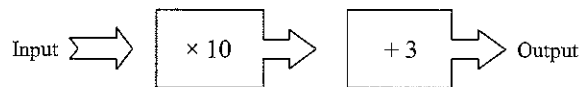
Q3

(Total 4 marks)



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4. Here is a two-stage number machine.
It multiplies by 10 and then adds 3



Complete the table.

| Input | Output |
|-------|--------|
| 1 | 13 |
| 2 | 23 |
| 5 | 53 |
| 8 | 83 |
| 10 | 103 |

$$5 \times 10 + 3$$

$$103 - 3 \xrightarrow{100} \div 10 \rightarrow 10$$

Q4

(Total 2 marks)

5.

Impossible Unlikely Even chance Likely Certain

From the words above, choose what best describes the probability

- (a) that the sun will shine in July next year in London,

Certain
(1)

- (b) that the next baby to be born will be a boy,

Even chance
(1)

- (c) that there will be 50 days next month.

Impossible
(1)

Q5

(Total 3 marks)

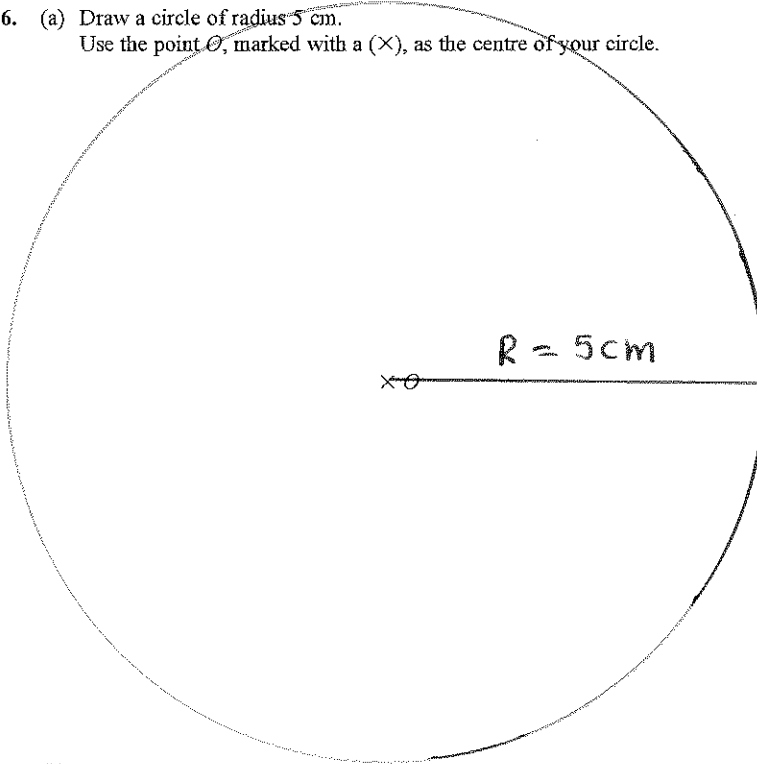
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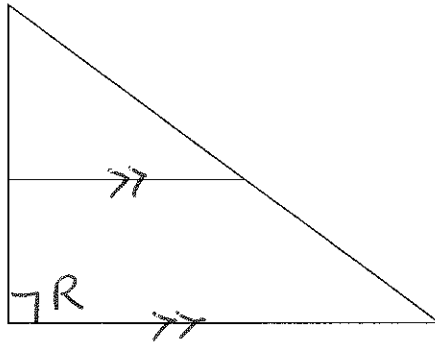
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6. (a) Draw a circle of radius 5 cm.
Use the point O , marked with a (\times), as the centre of your circle.



(1)

(b)



- (i) On the diagram mark, with arrows ($>>$), a pair of parallel lines.

(1)

- (ii) On the diagram mark, with a letter R, a right-angle.

(1)

Q6

(Total 3 marks)



Leave blank

7. Complete this table by writing a sensible unit for each measurement.

| | Metric | Imperial |
|---------------------------------|-----------|----------|
| The height of a door | metre | feet |
| The weight of a man | kilograms | stones |
| The volume of water in a bucket | litre | gallons |

Q7

(Total 3 marks)

8. (a) Work out 5^2

$$5 \times 5$$

$$25$$

(1)

(b) Find the square root of 3.24

$$\sqrt{3.24} = 1.8$$

$$1.8$$

(1)

Q8

(Total 2 marks)

9. Here are the first four terms of a number sequence.

7 10 13 16

 +3

(a) Write down the next term in this number sequence.

$$19$$

(1)

(b) Explain how you found your answer.

Term to term rule +3

(1)

Q9

(Total 2 marks)

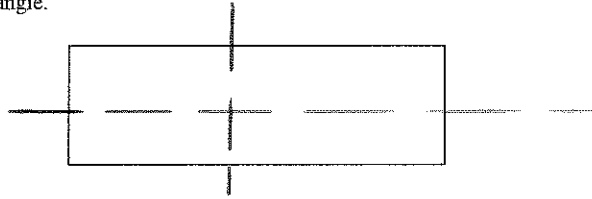


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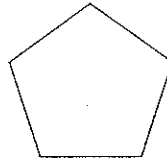
10. Here is a rectangle.



(a) Draw all the lines of symmetry of this rectangle.

(2)

Here is a regular pentagon.

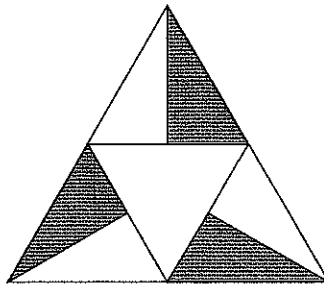


(b) Write down the order of rotational symmetry of this regular pentagon.

5

(1)

Here is a shape.



(c) Write down the order of rotational symmetry of this shape.

3

(1)

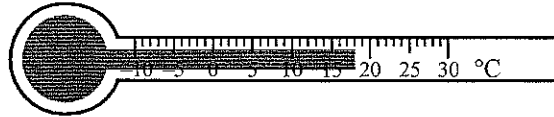
Q10

(Total 4 marks)



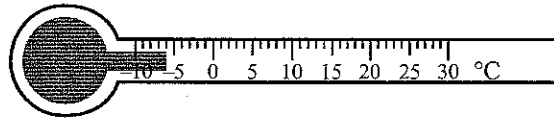
11. (a) Write down the temperature shown on each of these thermometers.

(i)



..... 18 °C

(ii)



..... -6 °C
(2)

The table shows the temperatures, in London, at different times on New Years Day, 2008

| Time of day | Temperature |
|-------------|-------------|
| 6 am | -3°C |
| 10 am | 0°C |
| noon | 2°C |
| 2 pm | 5°C |
| 6 pm | 4°C |
| 10 pm | -1°C |

(b) Write down the lowest temperature.

..... -3 °C
(1)

(c) Work out the difference in temperature between 6 pm and 10 pm.

$$4 - -1 = 5^{\circ}\text{C}$$

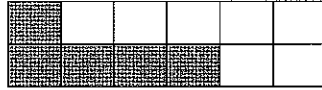
..... 5 °C
(1)

(Total 4 marks)

Q11



12.



(a) What fraction of the shape is shaded?

$$\frac{5}{12} \quad (1)$$

(b) Here is a list of fractions.

$$\frac{2}{10} \quad \frac{4}{20} \quad \frac{5}{20} \quad \frac{10}{50} \quad \frac{3}{10}$$

Two of the fractions are **not** equivalent to $\frac{1}{5}$

Write down these two fractions.

$$\frac{1}{5} = \frac{4}{20} \text{ Not } \frac{5}{20}$$

$$\frac{1}{5} = \frac{2}{10} \text{ Not } \frac{3}{10}$$

$$\frac{5}{20} \text{ and } \frac{3}{10} \quad (2)$$

(c) Work out $\frac{3}{4}$ of 64

$$\frac{3}{4} \times 64 = 3 \times \frac{64}{4} = 3 \times 16$$

$$\text{or } \frac{1}{4} \text{ of } 64 = 16 \quad \frac{48}{\quad} \quad (2)$$

(Total 5 marks)

Q12

$$\frac{3}{4} \text{ of } 64 = 16 \times 3 = 48$$



13. Tulips cost 85p each. ~~£~~0.85
 Sara has £20 to spend on tulips.
 She buys the greatest possible number of tulips.

(a) Work out the number of tulips Sara buys.

$$20 \div 0.85 = 23.52$$

23 tulips
(2)

Sara pays with a £20 note.

(b) Work out how much change Sara should get.

$$85 \times 23 = 1955 \text{ pence}$$

$$£20 = 2000 \text{ p}$$

$$\text{change} = 2000 - 1955 = 45 \text{ p}$$

(Total 4 marks)

Leave blank

Q13

14. The two-way table gives information about the subjects studied by 50 students.

| | Law | Engineering | Medicine | Total |
|--------|-----|-------------|----------|-------|
| Male | 6 | 15 | 4 | 25 |
| Female | 5 | 6 | 14 | 25 |
| Total | 11 | 21 | 18 | 50 |

(a) Complete the two-way table.

(3)

One of these students is chosen at random.

(b) Find the probability that this student is male and studies Law.

$$P(M, \text{Law}) = \frac{6}{50} = 0.12$$

0.12
(2)

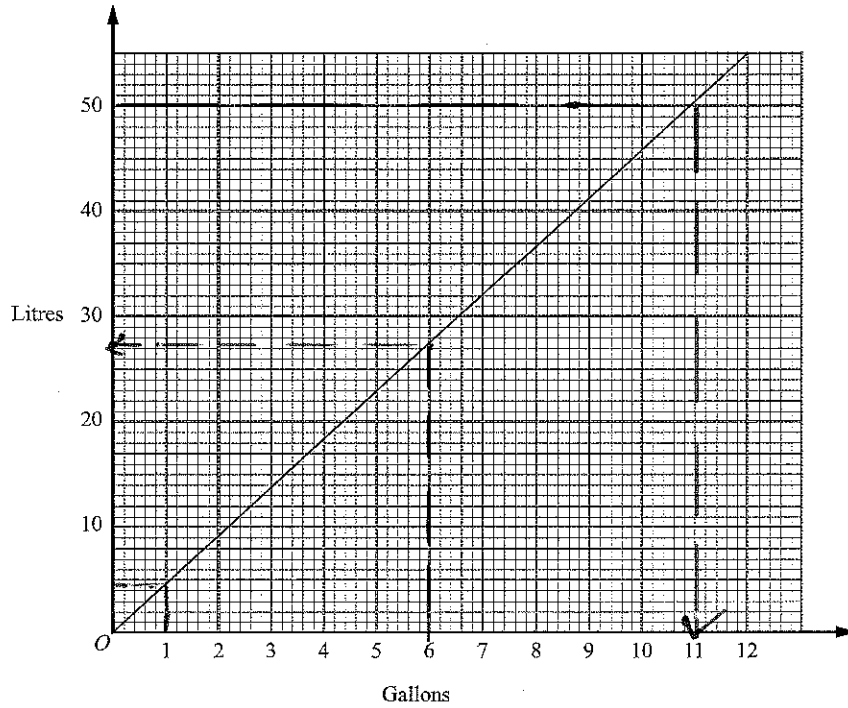
(Total 5 marks)

Q14



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15. This conversion graph can be used to change between litres and gallons.



(a) Use the graph to change 50 litres to gallons.

..... 11 gallons
(1)

(b) Use the graph to change 6 gallons to litres.

..... 28 / 27.5 litres
(1)

1 litre of petrol costs £1.15

(c) Work out the cost of 50 litres of petrol.

$$1.15 \times 50 = \underline{57.50}$$

£ 57.50
(2)

(d) Work out an estimate for the cost of 1 gallon of petrol.

$$\begin{aligned} 1 \text{ gallon} &\approx 4.5 \text{ litres} \\ 1.15 \times 4.5 &= 5.18 \end{aligned}$$

£ 5.18
(2)

(Total 6 marks)

Q15



16. (a) Solve $\frac{x}{5}=3$

$$5 \times \frac{x}{5} = 3 \times 5$$

$$x = 15$$

$$x = \underline{15} \quad (1)$$

(b) Solve $2y-4=9$

$$2y - 4 + 4 = 9 + 4$$

$$2y = 13$$

$$y = 13 \div 2$$

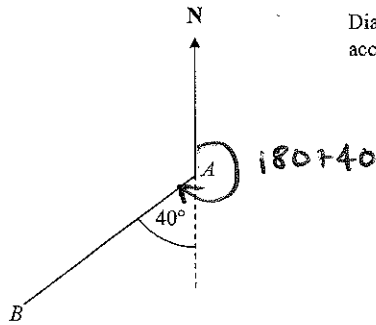
$$y = \underline{6.5} \quad (2)$$

(Total 3 marks)

Leave blank

Q16

17.



Work out the bearing of B from A.

$$40^\circ + 180^\circ = 220^\circ$$

$$\underline{220}^\circ$$

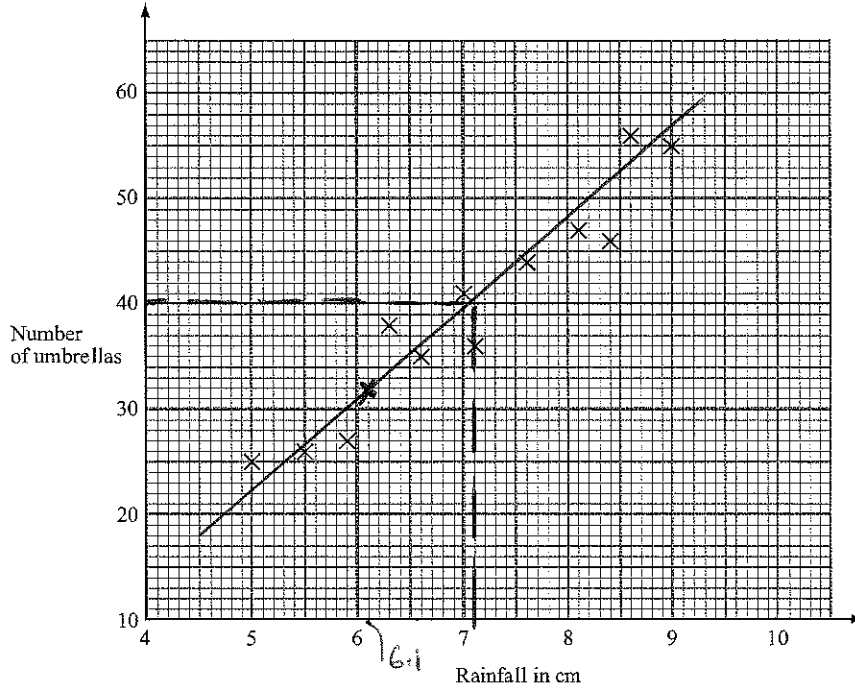
(Total 2 marks)

Q17



20. Mr Wither sells umbrellas.

The scatter graph shows some information about the number of umbrellas he sold and the rainfall, in cm, each month last year.



In January of this year, the rainfall was 6.1 cm.
During January, Mr Wither sold 32 umbrellas.

(a) Show this information on the scatter graph. (1)

(b) What type of correlation does this scatter graph show?
..... Positive (1)

In February of this year, Mr Wither sold 40 umbrellas.

(c) Estimate the rainfall for February.
accept 7 - 7.3 7.1 cm (2)

(Total 4 marks)

Q20



Leave blank

21. In August 2008, Eddie hired a car in Italy.

The cost of hiring the car was £620
The exchange rate was £1 = €1.25

$$\begin{array}{l} \text{£1} \quad \curvearrowright \quad \text{€1.25} \\ \text{£620} \quad \curvearrowright \quad ? \end{array}$$

(a) Work out the cost of hiring the car in euros (€).

$$620 \times 1.25 = 775$$

$$\text{€} \dots 775 \dots$$

(2)

Eddie bought some perfume in Italy.

The cost of the perfume in Italy was €50
The cost of the same perfume in London was £42

The exchange rate was still £1 = €1.25

(b) Work out the difference between the cost of the perfume in Italy and the cost of the perfume in London.

Give your answer in pounds (£).

$$\text{€} 1.25 \quad \curvearrowright \quad \text{£1}$$

$$\text{€} 50 \quad \curvearrowright \quad ?$$

$$50 \div 1.25 = \text{£}40$$

$$\text{Italy} : \text{£}40$$

$$\text{London} : \text{£}42$$

$$\text{Difference} = \text{£}2$$

$$\text{£} \dots 2 \dots$$

(3)

(Total 5 marks)

Q21



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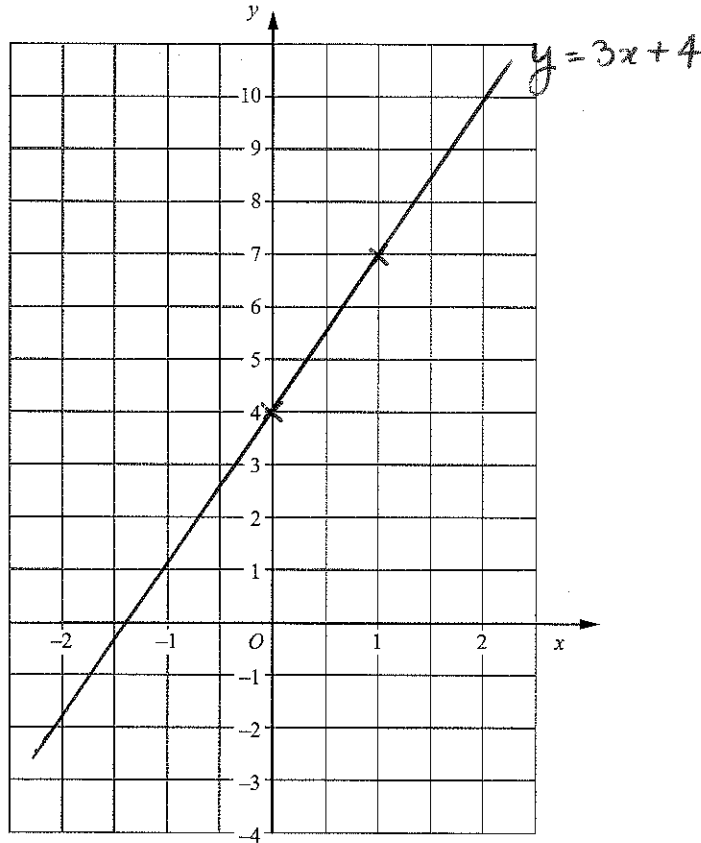
22. (a) Complete the table of values for $y = 3x + 4$ ⁺³

| | | | | | |
|---|----|----|---|---|----|
| x | -2 | -1 | 0 | 1 | 2 |
| y | -2 | 1 | 4 | 7 | 10 |

(2)

$x = 0 \quad y = 3 \times 0 + 4 = 4$

(b) On the grid, draw the graph of $y = 3x + 4$



(2)

Q22

(Total 4 marks)



23. (a)

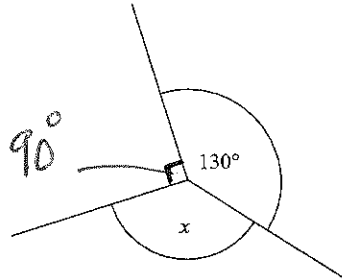


Diagram NOT accurately drawn

$$x + 90 + 130 = 360$$

$$x = 360 - (130 + 90)$$

$$x = 140$$

(i) Work out the size of the angle marked x .

140 °

(ii) Give a reason for your answer.

Angles at a point add up to 360°

(3)

(b)

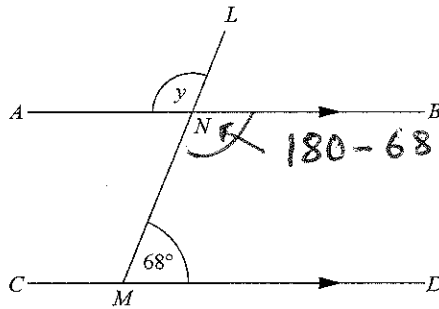


Diagram NOT accurately drawn

$$180 - 68 = 112$$

ANB is parallel to CMD .
 LNM is a straight line.
 Angle $LMD = 68^\circ$

(i) Work out the size of the angle marked y .

112 °

(ii) Give reasons for your answer.

opposite angles are equal
 \hat{N} & \hat{M} supplementary in parallel lines -

(3)

(Total 6 marks)

Q23



24. The equation

$$x^3 + 10x = 25$$

has a solution between 1 and 2

Use a trial and improvement method to find this solution.

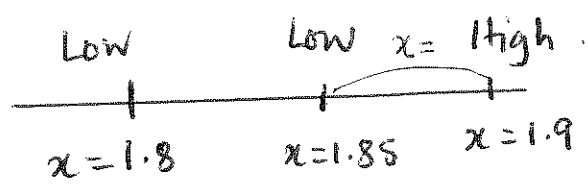
Give your answer correct to one decimal place.

You must show all your working.

| x | $x^3 + 10x$ | H/L ? |
|------|------------------------------------|-------|
| 1 | $1^3 + 10 \times 1 = 11$ | Low |
| 2 | $2^3 + 10 \times 2 = 28$ | High |
| 1.5 | $1.5^3 + 10 \times 1.5 = 18.375$ | Low |
| 1.6 | $1.6^3 + 10 \times 1.6 = 20.096$ | Low |
| 1.8 | $1.8^3 + 10 \times 1.8 = 23.832$ | Low |
| 1.9 | $1.9^3 + 10 \times 1.9 = 25.859$ | High |
| 1.85 | $1.85^3 + 10 \times 1.85 = 24.831$ | Low |

$x = 1.9$ Q24

(Total 4 marks)



$x = 1.86$
 $= 1.87$ to 1 dp $x = 1.9$
 $= 1.88$
 $= 1.89$



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25. There are some ribbons in a box.
The ribbons are green or red or yellow or white.

The table shows each of the probabilities that a ribbon chosen at random will be green or red or white.

| Colour | Green | Red | Yellow | White |
|-------------|-------|------|--------|-------|
| Probability | 0.15 | 0.30 | | 0.35 |

- (a) Work out the probability that a ribbon chosen at random will be yellow.

$$P(\text{yellow}) = 1 - (0.15 + 0.30 + 0.35)$$
$$= 1 - 0.8$$

0.2

(2)

There are 500 ribbons in the box.

- (b) Work out the number of red ribbons.

$$\text{Red ribbons} = 0.30 \times 500$$
$$= 150$$

150

(2)

Q25

(Total 4 marks)



26.

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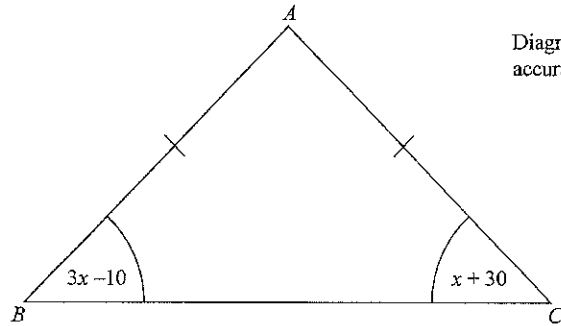


Diagram NOT
accurately drawn

ABC is an isosceles triangle.
 $AB = AC$

(a) Explain why $3x - 10 = x + 30$.

$\triangle ABC$ isosceles - angles at base are equal. (1)

(b) Solve $3x - 10 = x + 30$

$$3x - x - 10 = x - x + 30$$

$$2x - 10 = 30$$

$$2x - 10 + 10 = 30 + 10$$

$$2x = 40$$

$$x = 20$$

$$x = \underline{20} \quad (2)$$

Q26

(Total 3 marks)



27.

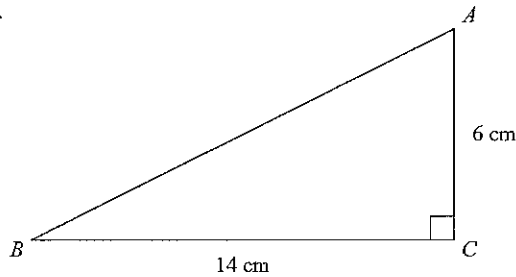


Diagram NOT accurately drawn

ABC is a right-angled triangle.
 $AC = 6$ cm.
 $BC = 14$ cm.

$$A = \frac{b \times h}{2}$$

(a) Work out the area of triangle ABC .

$$\text{Area} = \frac{14 \times 6}{2} = 7 \times 6 = 42$$

42 cm²
(2)

(b) Calculate the length of AB .
 Give your answer correct to 2 decimal places.

Pythagoras theorem:

$$AB^2 = BC^2 + CA^2$$

$$AB = \sqrt{14^2 + 6^2}$$

$$AB = \sqrt{232}$$

$$= 15.2315$$

15.23 cm
(3)

Q27

(Total 5 marks)

TOTAL FOR PAPER: 100 MARKS

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