

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

Paper Reference(s)  
**1380/2F**

# Edexcel GCSE

## Mathematics (Linear) – 1380

### Paper 2 (Calculator)

# Foundation Tier

Monday 5 March 2012 – Afternoon

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 25 questions in this question paper. The total mark for this paper is 100.

There are 20 pages in this question paper. Any blank pages are indicated.

**Calculators may be used.**

If your calculator does not have a  $\pi$  button, take the value of  $\pi$  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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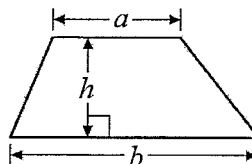
**PEARSON**

GCSE Mathematics (Linear) 1380

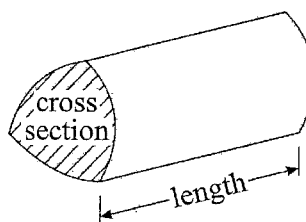
Formulae: Foundation Tier

**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



Answer ALL TWENTY FIVE questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1. (a) Write the number 5076 in words.

Five thousand and seventy six  
.....  
(1)

- (b) Write the number twelve thousand, five hundred and seven in figures.

12507  
.....  
(1)

- (c) Write the number 72 879 to the nearest thousand.

72/879  
.....  
73000  
.....  
(1)

- (d) Write down the value of the 7 in the number 5709

700  
.....  
(1)

(Total 4 marks)

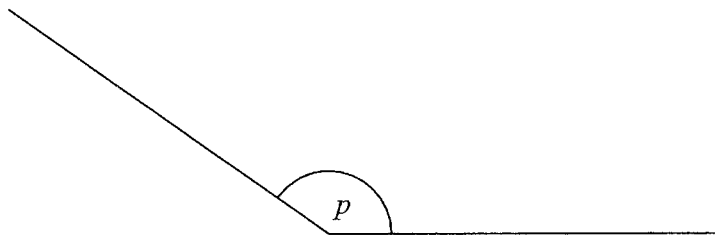
Q1



2. (a) Measure the length of the line  $XY$ .



8 cm  
 .....  
 (8.3 ; 8.7) (2)  
 accept .



(b) What type of angle is angle  $p$ ?

Obtuse  
 .....  
 (1)

(c) Measure the size of angle  $p$ .

145 °  
 .....  
 (1)

Q2

(Total 4 marks)

3. Complete this table.  
 Write a sensible unit for each measurement.

	Metric	Imperial
The weight of a bicycle	Kg	pounds
The volume of water in a watering can	litres	pints
The length of this page	centimetres	Inches

Q3

(Total 3 marks)



4. Tom wrote down the colour of all the cars going past his house in 10 minutes. Here are his results.

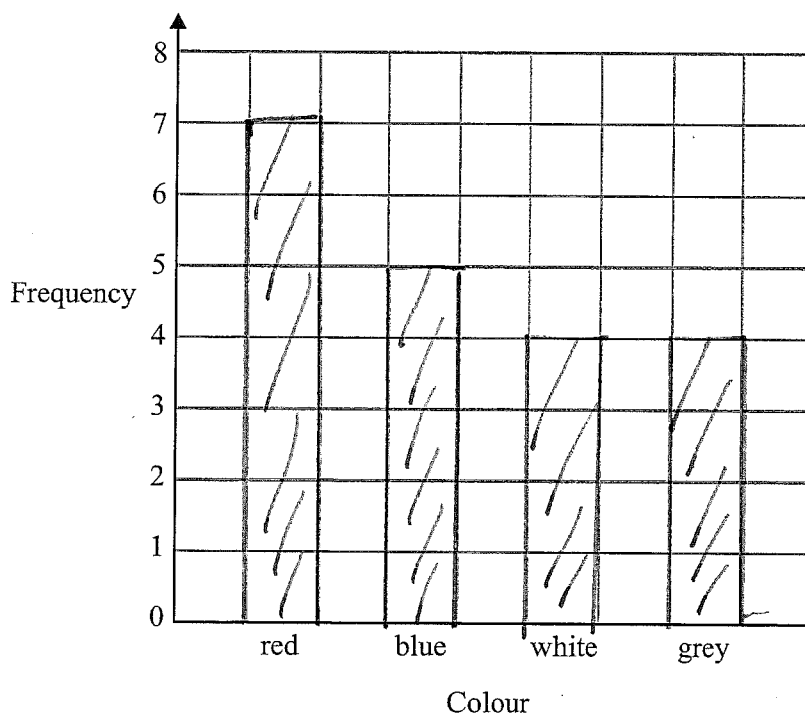
red      blue      grey      red      grey  
 white   white   red      blue   white  
 red      red      grey      grey   red  
 blue      blue      red      white   blue

(a) Complete the frequency table for his results.

Colour	Tally	Frequency
red		7
blue		5
white		4
grey		4

(2)

(b) On the grid, draw a bar chart to show this information.



(2)

(c) Which colour is the mode?

Red

(1)

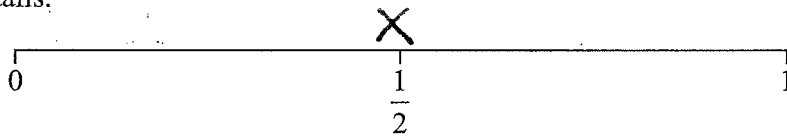
Q4

(Total 5 marks)



5. (a) Simon throws a fair coin.

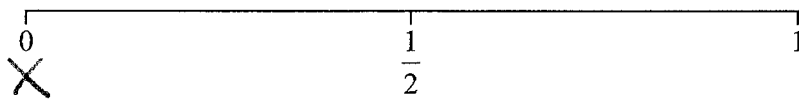
On the probability scale, mark with a cross (×), the probability that the coin will land on tails.



(1)

- (b) Suresh throws an ordinary 6-sided dice.

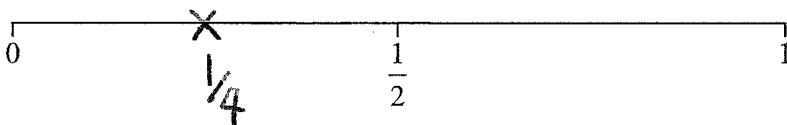
On the probability scale, mark with a cross (×), the probability that she will throw a 7



(1)

- (c) There are three yellow sweets and one blue sweet in a bag. Gulam takes at random a sweet from the bag.

On the probability scale, mark with a cross (×), the probability that he will take a blue sweet.



(1)

Q5

(Total 3 marks)

6. Nathan thinks of a number.  
He doubles the number.  
He adds 5

His answer is 17

What number does Nathan think of?

let  $x$  be the number,

$$x \rightarrow \times 2 \rightarrow +5 \rightarrow 17$$

$$6 \leftarrow \div 2 \leftarrow \overset{12}{-5} \leftarrow 17$$

$$x = 6$$

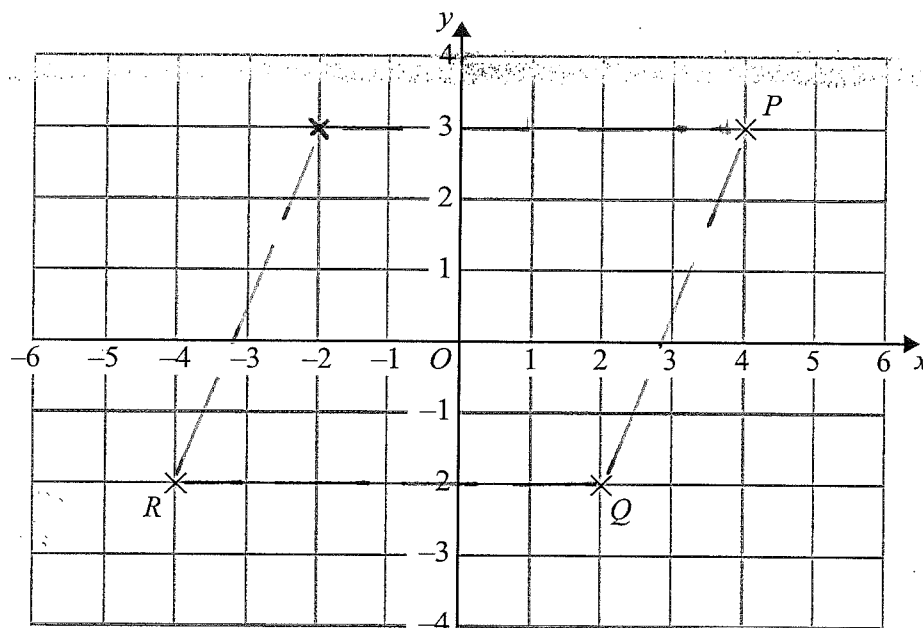
6

(Total 3 marks)

Q6



7. Here is a coordinate grid.



(a) Write down the coordinates of the point

(i)  $P$

(....., .....)

(ii)  $R$

(....., .....)

$PQRS$  is a parallelogram.

(b) On the grid, mark with a cross ( $\times$ ) the fourth corner,  $S$ , of the parallelogram.

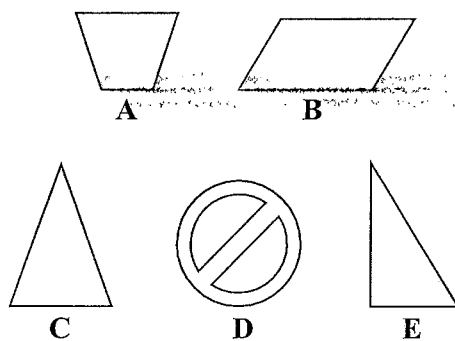
(2)

Q7

(Total 4 marks)



8. Here are five shapes.



Two of these shapes have only **one** line of symmetry.

(a) Write down the letter of each of these **two** shapes.

..... **A** ..... and ..... **C** .....  
(2)

Two of these shapes have rotational symmetry of order 2

(b) Write down the letter of each of these **two** shapes.

..... **B** ..... and ..... **D** .....  
(2)

(Total 4 marks)

Q8

9. Sherri says

“If you multiply an odd number by 7 and take away 2 you always get a prime number”.

Show that Sherri is wrong.

..... **odd number : 5** .....

..... **5 × 7 = 35** .....

..... **35 - 2 = 33 is not a prime number** .....

(Total 2 marks)

Q9





10. (a) Simplify  $a + a + a + a$

$$\frac{4a}{\dots\dots\dots} \quad (1)$$

(b) Simplify  $3a + 5b - a + 2b$

$$\begin{array}{l} 3a - a + 5b + 2b \\ 2a + 7b \end{array} \quad \frac{2a + 7b}{\dots\dots\dots} \quad (2)$$

(c) Solve  $3x = 12$

$$\frac{3x}{3} = \frac{12}{3} = 4 \quad x = \frac{4}{\dots\dots\dots} \quad (1)$$

(d) Solve  $y - 7 = 5$

$$\begin{array}{l} y - 7 + 7 = 5 + 7 \\ y = 12 \end{array} \quad y = \frac{12}{\dots\dots\dots} \quad (1)$$

(e) Solve  $2t + 8 = 3$

$$\begin{array}{l} 2t + 8 - 8 = 3 - 8 \\ 2t = -5 \\ t = -5/2 \end{array} \quad t = \frac{-5/2}{\dots\dots\dots} = -2.5 \quad (2)$$

(Total 7 marks)

Q10

11. Here are the first seven terms in a number sequence.

3    6    5    8    7    10    9

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

$$\begin{array}{ccccccc} 3 & 6 & 5 & 8 & 7 & 10 & 9 \\ \underbrace{\quad} & \underbrace{\quad} & \underbrace{\quad} & \underbrace{\quad} & \underbrace{\quad} & \underbrace{\quad} & \underbrace{\quad} \\ +3 & -1 & +3 & -1 & +3 & -1 & \dots\dots\dots \end{array} \quad \frac{12}{\dots\dots\dots}, \frac{11}{\dots\dots\dots} \quad (2)$$

Here are the first five terms in a different number sequence.

5    9    13    17    21    term to term +4.

(b) Find the 10th term in this number sequence.

$$\begin{array}{l} 5 = 1 \times 4 + 1 \\ 9 = 2 \times 4 + 1 \end{array} \quad \begin{array}{l} 10^{\text{th}} \text{ term:} \\ \underline{10 \times 4 + 1} \end{array} \quad \frac{41}{\dots\dots\dots} \quad (2)$$

(c) Write an expression, in terms of  $n$ , for the  $n$ th term of this number sequence.

$$\begin{array}{l} 5 = 1 \times 4 + 1 \\ 9 = 2 \times 4 + 1 \\ 13 = 3 \times 4 + 1 \\ \vdots \\ n \times 4 + 1 \end{array} \quad \frac{4n + 1}{\dots\dots\dots} \quad (2)$$

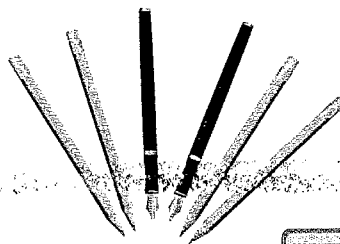
(Total 6 marks)

Q11



12. Mel buys

- 2 pens costing 55p each
- 4 pencils costing 28p each
- a calculator costing £4.95



Mel pays with a £10 note.

Work out how much change she should get.

2 pens:  $2 \times 55 = 110p = \pounds 1.10$

4 pencils:  $4 \times 28 = 112p = \pounds 1.12$

calculator:  $\pounds 4.95$

Total =  $\pounds 1.10 + \pounds 1.12 + \pounds 4.95$

$$\begin{array}{r} 1.10 \\ 1.12 \\ 4.95 \\ \hline \pounds 7.17 \end{array}$$

Change =  $\pounds 10 - \pounds 7.17$

$$\begin{array}{r} \cancel{10.00} \\ - 7.17 \\ \hline 2.83 \end{array}$$

£ ..... 2.83

Q12

(Total 4 marks)

13.  $P = 2l + 2w$

(a) Work out the value of  $P$  when  $l = 6$  and  $w = 4$

$$\begin{aligned} P &= 2 \times 6 + 2 \times 4 \\ &= 12 + 8 \end{aligned}$$

$P = \dots\dots\dots 20$   
(2)

(b) Work out the value of  $l$  when  $P = 24$  and  $w = 3$

$$2l + 2w = P$$

$$2l = P - 2w$$

$$l = \frac{P - 2w}{2} = \frac{24 - 2 \times 3}{2}$$

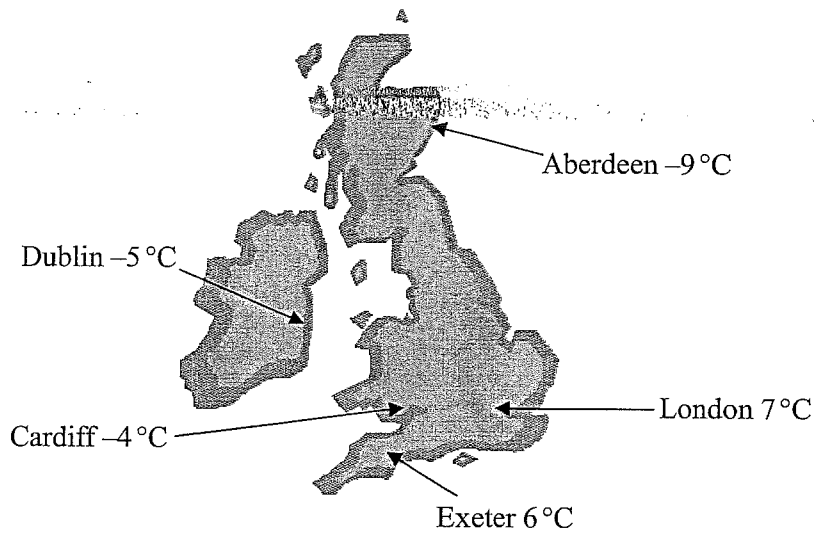
$l = \dots\dots\dots 9$   
(2)

Q13

(Total 4 marks)



14. The map shows the temperatures in some cities one night last winter.



(a) Write down the name of the city with the highest temperature.

London (1)

(b) Write down the name of the city with the lowest temperature.

Aberdeen (1)

(c) Work out the difference in temperature between Cardiff and Exeter.

$$6 - -4 = 6 + 4$$

10 °C (1)

(d) Two cities have a difference in temperature of 4°C. Write down the names of these cities.

$$(-5) - (-9) = -5 + 9 = 4$$

Dublin and Aberdeen (1)

(Total 4 marks)

Q14



15. A rugby team played six games.

Here is the number of points they scored in each game.

~~24~~ ~~8~~ ~~18~~ ~~6~~ ~~12~~ ~~19~~

(a) Work out the median score for these six games.

$$6 \quad 8 \quad 12 \quad 18 \quad 19 \quad 24$$

↑  
median

$$M = \frac{12 + 18}{2} = 15$$

..... 15  
(2)

(b) Work out the mean score for these six games.

$$\text{Mean} = \frac{24 + 8 + 18 + 6 + 12 + 19}{6}$$

$$\text{Mean} = 14.5$$

..... 14.5  
(2)

The rugby team played one more game.  
The mean score for all seven games is 16

(c) Work out the number of points the team scored in the seventh game.

Total score for 7 games:  $16 \times 7 = 112$ .

Total score for 6 games:  $14.5 \times 6 = 87$

In the seventh game:

$$112 - 87 = 25$$

..... 25 ..... points  
(2)

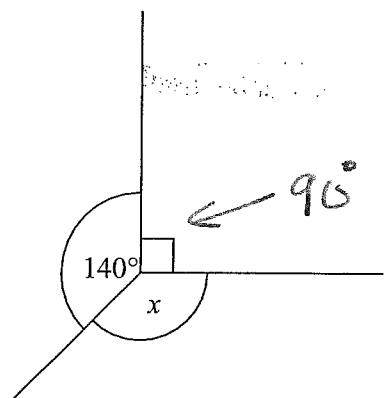
(Total 6 marks)

Q15



16.

Diagram NOT accurately drawn



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

$$90 + 140 + x = 360$$

$$230 + x = 360$$

130

(ii) Give a reason for your answer.

Angles at a point add up to  $360^\circ$

Q16

(Total 3 marks)

17. Minnie invested £250 for 3 years at 4% simple interest.

Work out the total interest Minnie gets.

$$\text{In year 1 : } \frac{4}{100} \times 250 = \frac{1}{25} \times 250 = £10$$

$$\text{In 3 years : } 10 \times 3 = 30$$

30

£ .....

Q17

(Total 3 marks)



18. Rosie and Jim are going on holiday to the USA.

Jim changes £350 into dollars (\$).

The exchange rate is £1 = \$1.34

(a) Work out how many dollars (\$) Jim gets.

$$350 \times 1.34 = 469$$

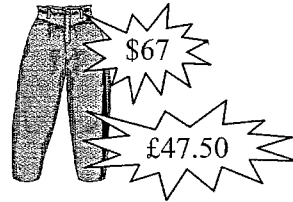
$$\begin{array}{r} 350 \\ \times 1.34 \\ \hline 1400 \\ + 1050 \\ + 350 \\ \hline 469.00 \end{array}$$

\$ 469 ..... (2)

In the USA Rosie sees some jeans costing \$67

In London the same make of jeans costs £47.50

The exchange rate is still £1 = \$1.34



(b) Work out the difference between the cost of the jeans in the USA and in London. Give your answer in pounds (£).

London:

£ 47.50

USA:

$$67 \div 1.34 = \text{£} 50$$

$$134 \overline{) 6700}$$

$$\begin{aligned} \text{Difference} &= 50 - 47.50 \\ &= 2.50 \end{aligned}$$

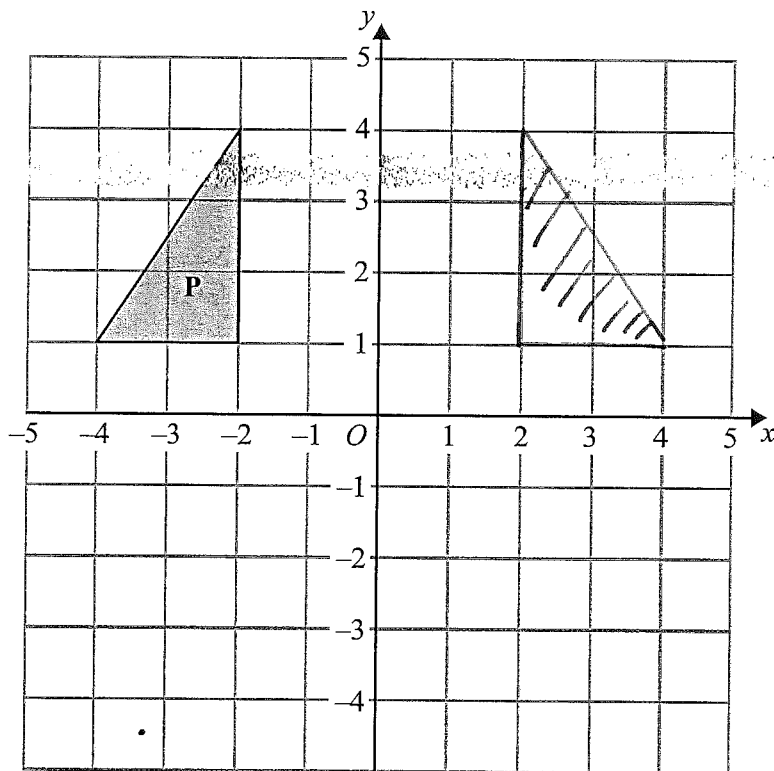
£ 2.50 ..... (3)

(Total 5 marks)

Q18



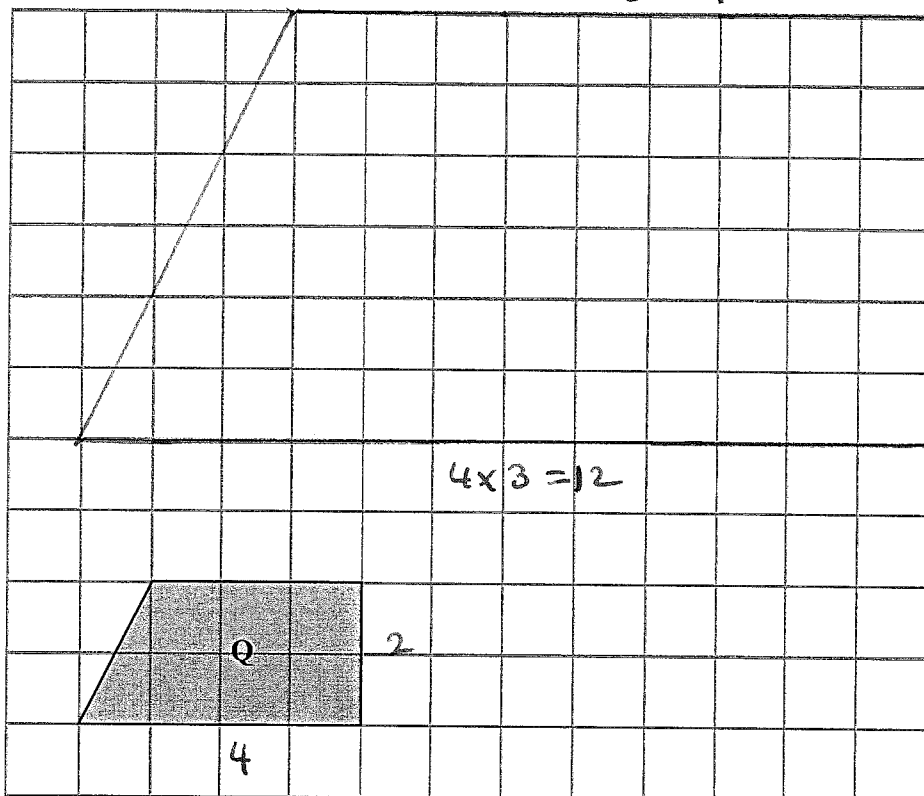
19.



(a) Reflect triangle P in the y-axis.

$3 \times 3 = 9$

(2)



(b) Draw an enlargement of shape Q scale factor 3

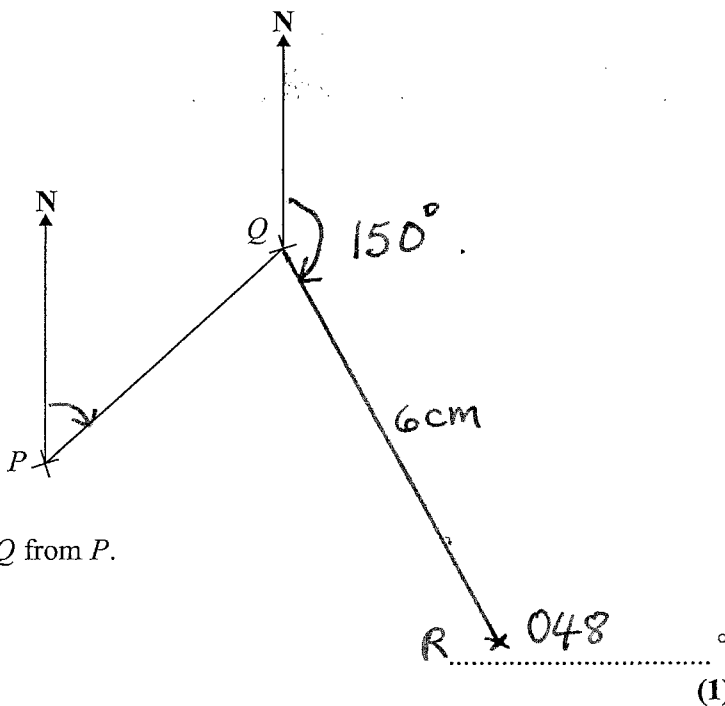
(2)

Q19

(Total 4 marks)



20. The diagram shows the position of two ports  $P$  and  $Q$  on a map.



(a) Measure the bearing of  $Q$  from  $P$ .

(1)

A rock  $R$  is on a bearing of  $150^\circ$  from  $Q$ .  
On the map  $R$  is 6 cm from  $Q$ .

(b) Mark the position of  $R$  with a cross ( $\times$ ) and label it  $R$ .

(2)

Q20

(Total 3 marks)

21. (a) Use your calculator to work out  $\frac{\sqrt{2.5^2 + 3.75}}{3.9 - 1.7}$

Write down all the figures on your calculator display.  
You must give your answer as a decimal.

1.437398  
.....  
(3)

(b) Write your answer to part (a) correct to 2 decimal places.

1.44  
.....  
(1)

Q21

(Total 4 marks)





22. The equation  $x^3 + 3x = 41$

has a solution between 3 and 4

Use a trial and improvement method to find this solution.

Give your answer correct to one decimal place.

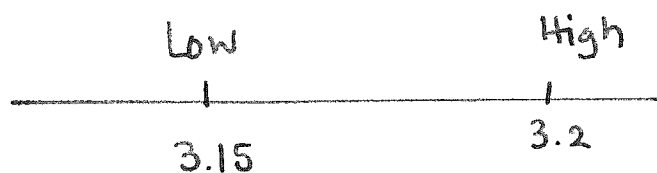
You must show all your working.

$x$	$x^3 + 3x$	
3	$3^3 + 3 \times 3 = 36$	Low
4	$4^3 + 3 \times 4 = 76$	High
3.5	$3.5^3 + 3 \times 3.5 = 53.375$	High
3.4	$3.4^3 + 3 \times 3.4 = 49.504$	High
3.3	$3.3^3 + 3 \times 3.3 = 45.837$	High
3.2	$3.2^3 + 3 \times 3.2 = 42.368$	High
3.1	$3.1^3 + 3 \times 3.1 = 39.091$	Low
3.15	$3.15^3 + 3 \times 3.15 = 40.705$	Low

$x = 3.2$

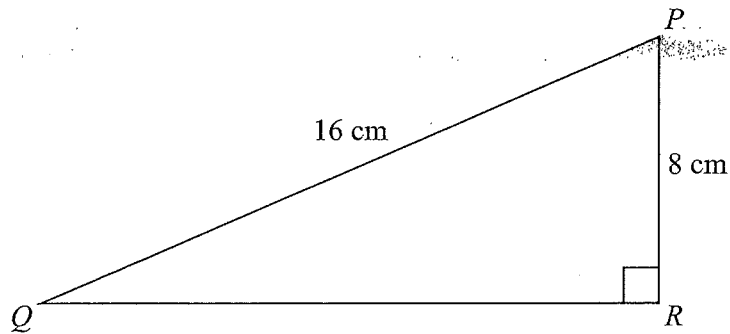
(Total 4 marks)

Q22



23.

Diagram NOT accurately drawn



$PQR$  is a right-angled triangle.  
 $PQ = 16$  cm.  
 $PR = 8$  cm.

Calculate the length of  $QR$ .  
Give your answer correct to 2 decimal places.

using Pythagoras:

$$QP^2 = PR^2 + QR^2$$

$$QR^2 = 16^2 - 8^2$$

$$QR^2 = 256 - 64$$

$$QR = \sqrt{192}$$

..... 13.86 cm

Q23

(Total 3 marks)



24. Riki has a packet of flower seeds.

The table shows each of the probabilities that a seed taken at random will grow into a flower that is pink or red or blue or yellow.

Colour	pink	red	blue	yellow	white
Probability	0.15	0.25	0.20	0.16	

(a) Work out the probability that a seed taken at random will grow into a white flower.

$$P(\text{white}) = 1 - (0.15 + 0.25 + 0.20 + 0.16)$$

$$P(\text{white}) = 0.24$$

0.24

(2)

There are 300 seeds in the packet.

All of the seeds grow into flowers.

(b) Work out an estimate for the number of red flowers.

$$\begin{aligned} \text{Number of red flowers} &= 0.25 \times 300 \\ &= 75 \end{aligned}$$

75 red flowers

(2)

Q24

(Total 4 marks)



25. Caleb measured the heights of 30 plants.

The table gives some information about the heights,  $h$  cm, of the plants.

Height ( $h$ cm) of plants	Frequency	Midpoint	Total height
$0 < h \leq 10$	2	5	$2 \times 5$
$10 < h \leq 20$	8	15	$8 \times 15$
$20 < h \leq 30$	9	25	$9 \times 25$
$30 < h \leq 40$	7	35	$7 \times 35$
$40 < h \leq 50$	4	45	$4 \times 45$

Work out an estimate for the mean height of a plant.

$$\text{Mean height} = \frac{\text{Total height of 30 flowers}}{\text{Total Number of flowers}}$$

$$\text{Mean} = \frac{2 \times 5 + 8 \times 15 + 9 \times 25 + 7 \times 35 + 4 \times 45}{30}$$

$$\text{Mean} = 26$$

..... 26 ..... cm

(Total 4 marks)

Q25

TOTAL FOR PAPER: 100 MARKS

END

