

Surname	Centre Number	Candidate Number
Other Names		0



GCSE LINKED PAIR PILOT

4362/01

APPLICATIONS OF MATHEMATICS

UNIT 2: Financial, Business and Other Applications

FOUNDATION TIER

P.M. TUESDAY, 22 January 2013

1½ hours

ADDITIONAL MATERIALS

A calculator will be required for this paper.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** the questions in the spaces provided.

Take π as 3.14 or use the π button on your calculator.

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.

Unless stated, diagrams are not drawn to scale.

Scale drawing solutions will not be acceptable where you are asked to calculate.

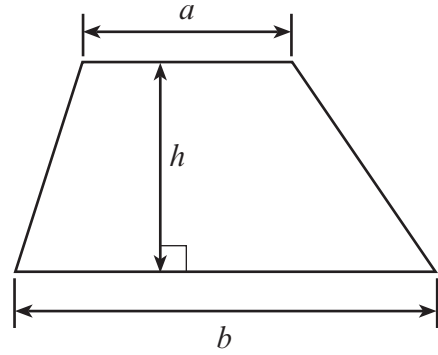
The number of marks is given in brackets at the end of each question or part-question.

You are reminded that assessment will take into account the quality of written communication (including mathematical communication) used in your answer to question 8(a).

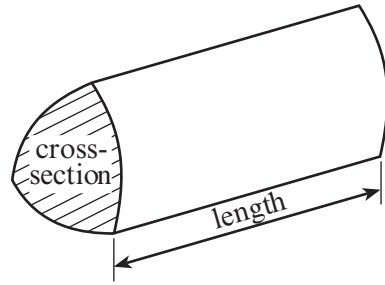
For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1	6	
2	6	
3	4	
4	4	
5	6	
6	6	
7	10	
8	8	
9	3	
10	4	
11	4	
12	3	
13	7	
14	3	
15	6	
TOTAL MARK		

Formula List

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



Volume of prism = area of cross-section \times length



1. The table below shows the prices of different sandwiches.

Sandwich	Price
Tuna	£1.99
Egg Salad	£1.80
Chicken & Bacon	£2.20
Chicken & Mayo	£2.10
Cheese & Pickle	£1.85

- (a) (i) Tommy buys two Tuna, one Chicken & Mayo and three Egg Salad sandwiches. What is the total cost of these sandwiches?

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[2]

- (ii) For each sandwich bought, Tommy buys a drink costing £1.29. How much do the drinks cost?

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[2]

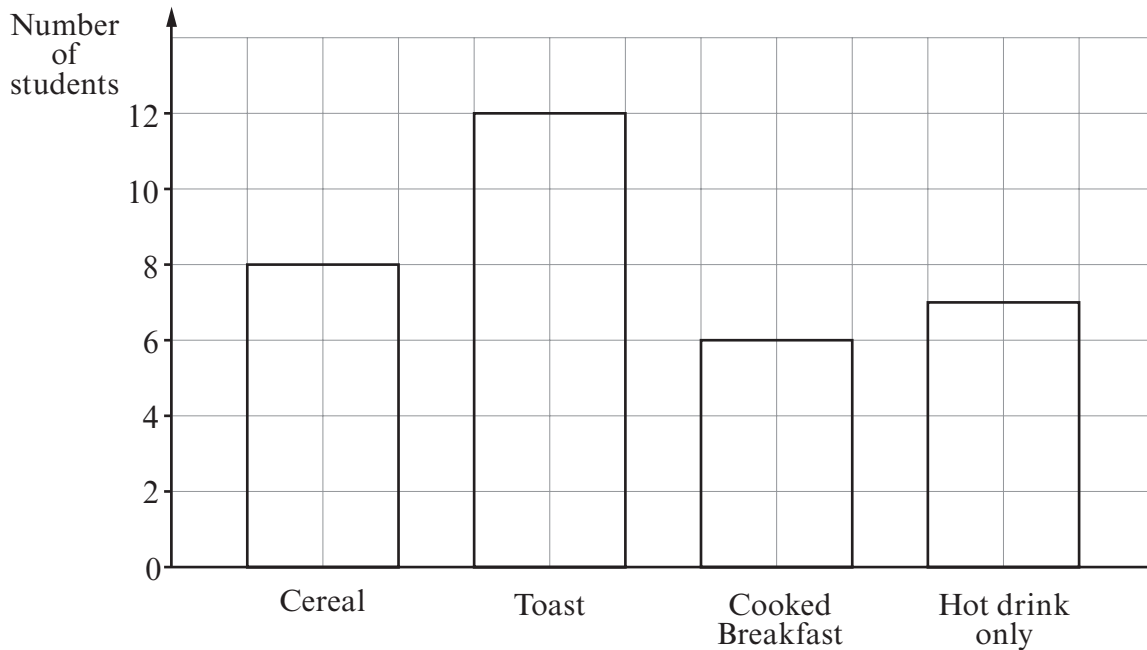
- (b) Tommy buys a box of chocolates to share out between six men. There are 48 chocolates in the box. The chocolates are shared out equally, how many will each man get?

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[2]

2. The bar chart shows the breakfast choices of a group of students the morning after their last examination. Each student had only one of the choices for breakfast.



- (a) How many students ate a cooked breakfast?

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[1]

- (b) How many students were there altogether?

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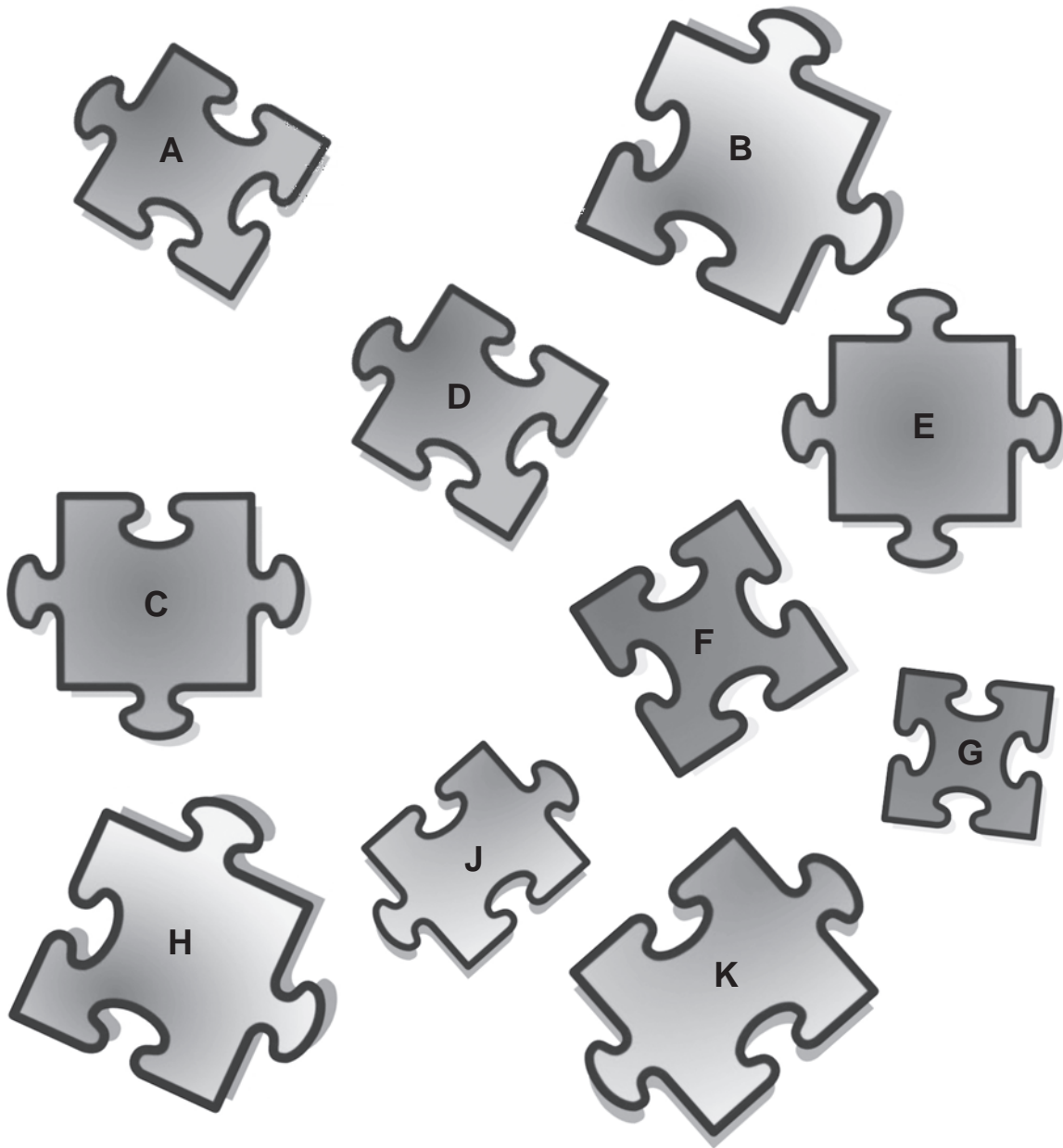
[2]

- (c) The students want to display this information as a pictogram.
In the space below, draw a pictogram to represent the data given in the bar chart.

Use  to represent 4 students.

[3]

3. The following shapes are pieces in a child's jigsaw puzzle.



(a) Which pieces of the jigsaw puzzle are congruent?

..... and are congruent

..... and are congruent

[2]

(b) Which pieces of the jigsaw puzzle are similar but not congruent?

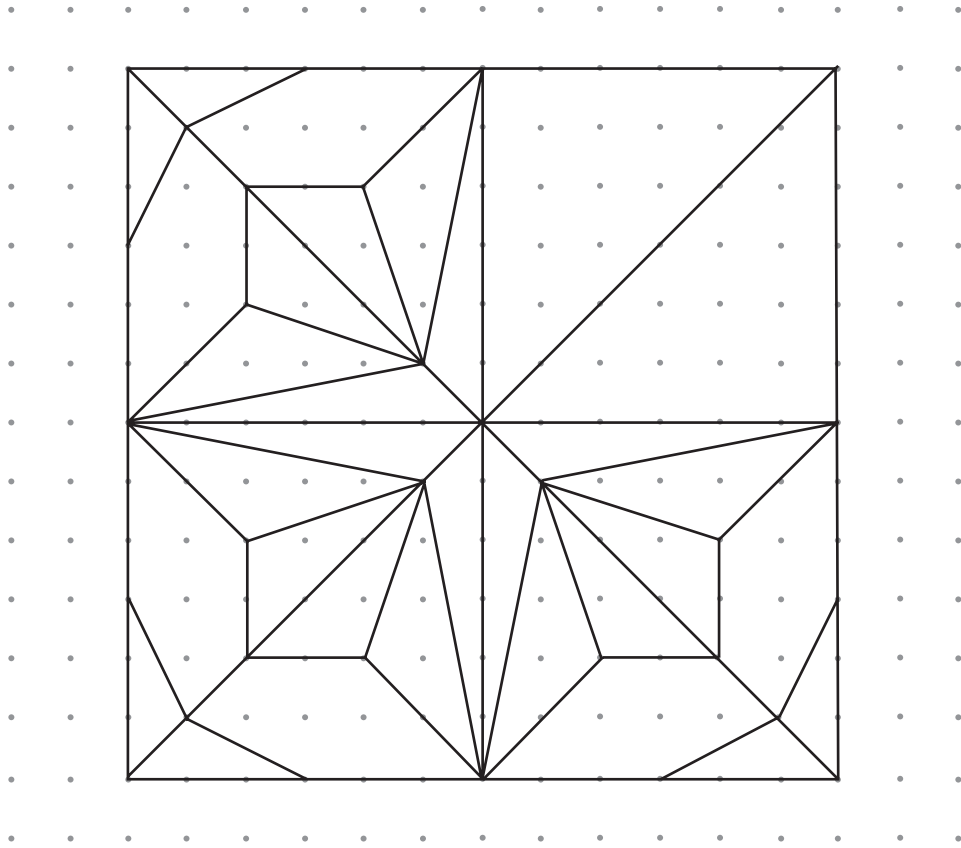
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[2]

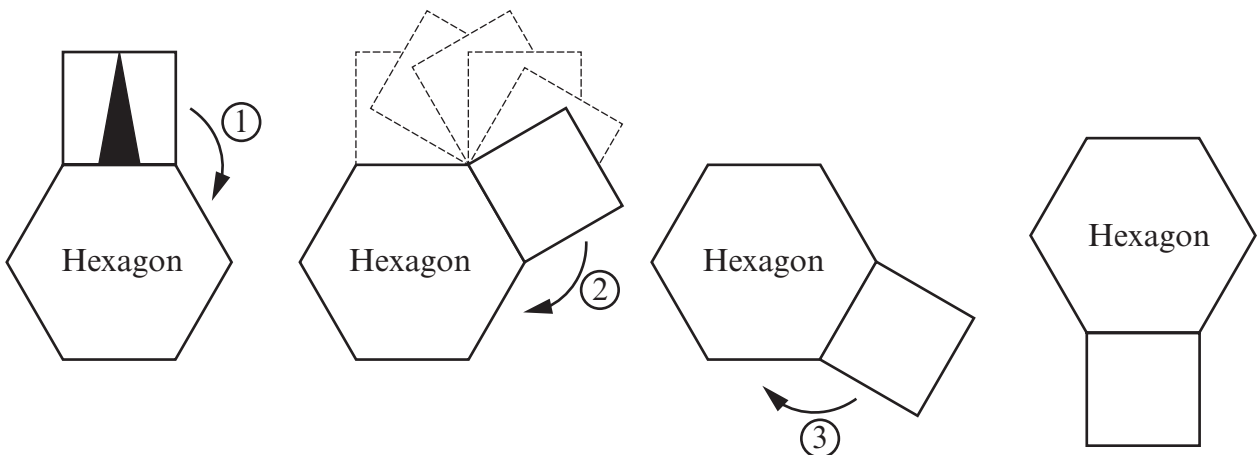
4. (a) Megan drew part of a Rangoli Pattern to celebrate the Diwali festival of light. Rangoli Patterns are based on reflective symmetry. Complete the pattern for Megan.

[2]



- (b) Ben created a game to take to the festival's party. His game is to roll a square, with a triangle inside it, around the outside of a regular hexagon. Those taking part in the game must try and draw the position of the triangle in its new position. Draw the correct position of the triangle inside the square after rolling the square 3 times around the outside of the regular hexagon.

[2]



5. In a job interview for a position in a supermarket, Bryn and Stacy were asked about different measurements.

(a) Bryn was asked to link each statement with a possible measurement.

Statement	Measurement
Length of a pen	1 kg
Height of a door	14 cm
Weight of a tin of beans	330 ml
Capacity of a can of fizzy drink	420 g
Weight of a bag of sugar	5 ml
The amount of fluid in a teaspoon	2 m

By drawing arrows, link each statement with its possible measurement. One arrow has already been drawn.

[4]

(b) Stacy was asked to explain which of the following is the better buy.

3 kg of potatoes
for 80p

OR

5 lbs of potatoes
for 80p

Which is the better buy? Give a reason for your answer.

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[2]

6.



Sale prices at P & A's Outlet Store are 40% below original prices.
 On Saturdays an additional discount of 20% **off the sale price** is given.

(a) If Lorraine shops at P & A's Outlet Store on a Tuesday and buys a coat that was originally priced at £140, how much discount will she get?

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Discount = £

[2]

(b) Lorraine is advised by her friend to wait until Saturday to purchase the coat.
 How much will Lorraine pay for the coat on Saturday?

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[4]

8. (a) *You will be assessed on the quality of your written communication in this part of the question.*

A local fitness centre wishes to build an outdoor 5-a-side football pitch of length 45 metres and width 25 metres.

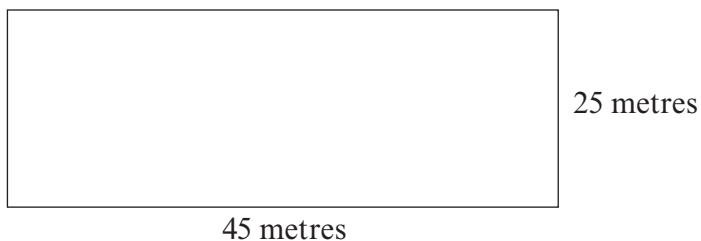


Diagram not drawn to scale

The cost of building the outdoor 5-a-side football pitch is £85 per square metre.
Calculate the total cost of building the outdoor 5-a-side football pitch.
You must show your working.

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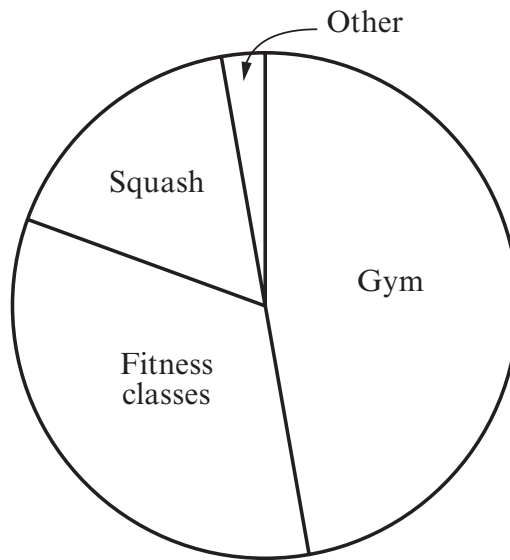
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[6]

- (b) The manager of the fitness centre counted the number of people taking part in various activities at 10 a.m. last Tuesday. He drew the following pie chart.



What fraction of the people were playing squash at 10 a.m. last Tuesday?

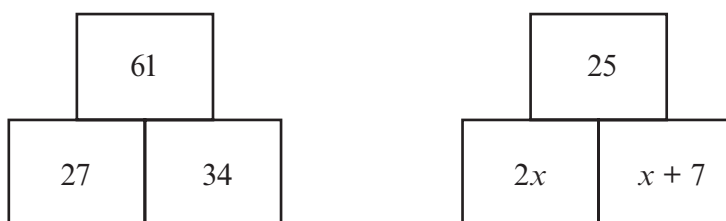
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[2]

9.



In the diagrams above, you find the value in the box on the top by finding the sum of the values in the two boxes below it.

For the second diagram, set up an equation and solve it to find the value of x .

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[3]

10. Jeff purchases a car costing £16 000 by obtaining a **simple interest** loan. The interest rate on the loan is 6.5% per annum and the loan is to be paid back over 5 years.

Calculate the **simple interest and the total to be paid** back over the 5 years.

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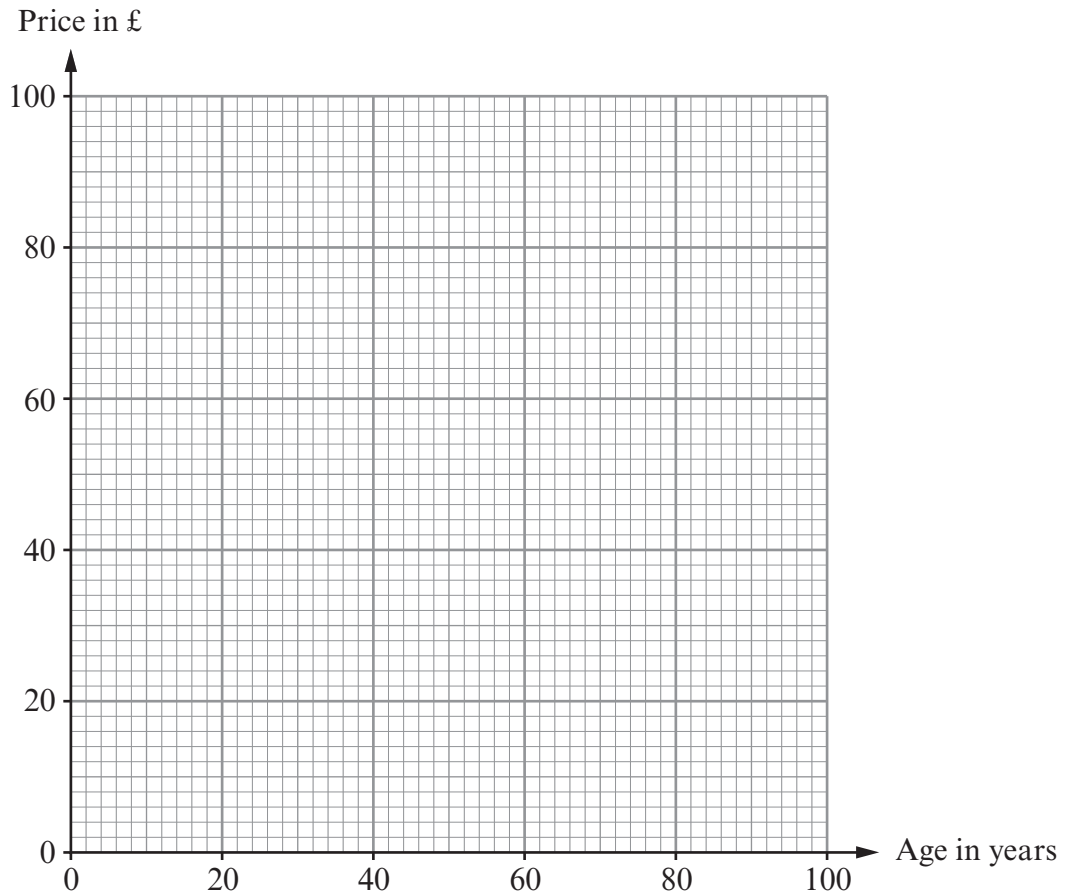
[4]

11. The age and price of each of 8 clocks in an antique shop are recorded in the table.

Age in years	12	40	70	50	46	80	62	32
Price in £	90	60	80	50	20	40	20	28

(a) Draw a scatter diagram to display these ages and prices.

[2]



(b) Write down the price of the oldest clock.

Price £
[1]

(c) Does the scatter diagram indicate that there is a correlation between the age and price of the clocks? You must give a reason for your answer.

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 [1]

12. Airlines publish flight records showing the percentage of flights that arrived on time at their destinations.



An extract from these flight records is shown below.

Flights from Cardael to Belslow Autumn 2012			
Airline	Flight number	Percentage of flights arriving on time	Average ticket price including taxes, in £
Far Flung	FF4356	74%	£100
Celtic Flights	CF3967	99%	£65
Roly Air	RA2099	96%	£65

Holly intends to fly from Cardael to Belslow to go to an appointment in Belslow city centre. If her flight arrives on time, she can catch the free bus to the city centre. If her flight arrives late, then she must take a taxi to the city centre costing £25.

Which airline should Holly choose to fly with?

You must


- consider each of the airlines,
- give a reason for your choice of airline **and** also reasons for not choosing each of the other two airlines.

Write your answers in the table opposite.

Airline	Choice, Yes or No?	Reasons
Far Flung	<p>.....</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
Celtic Flights	<p>.....</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
Roly Air	<p>.....</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>

[3]

13. The spreadsheet below gives details of the hours worked and the rate of pay for three of the employees who work in a supermarket.

	A	B	C	D	E
1	Employee	Hourly rate in £	Weekday hours worked	Weekend hours worked	Total week's pay in £
2	Erica	9.50	22	3	266
3	Georgie	12.80	20	5	384
4	Ranj	9.80	17		245

All employees earn double the hourly rate for any weekend hours worked.

- (a) Use the entries in the spreadsheet to calculate the hidden value of cell **D4**.

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[3]

- (b) Write down the formula, using cell references, used to calculate the entry for cell **E3**.

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[4]

14.

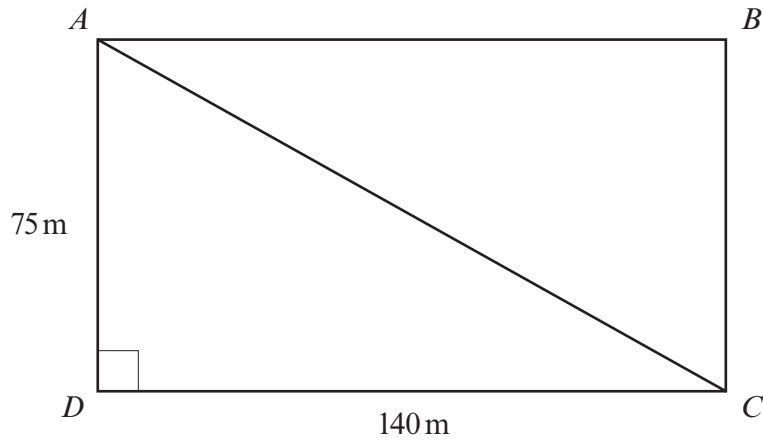


Diagram not drawn to scale

The above diagram represents a rectangular field $ABCD$.
The length of the field $DC = 140$ m.
The width of the field $AD = 75$ m.
Calculate the length of the diagonal AC .

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[3]

15. Tanya used a stem-and-leaf diagram to record the prices of two makes of mobile phone on display in a supermarket.

Tanya's stem-and-leaf diagram is shown below.

NewKey		eLime
1	5	0 2
	4	2 3
8 7	3	1 1 6 8
3 3	2	3
8 6 2 1	1	5

Key: NewKey 1 | 5 means £51
 eLime 1 | 5 means £15

- (a) Tanya has forgotten to record a £45 NewKey phone and a £25 eLime phone. Complete the stem-and-leaf diagram above by entering this extra data for Tanya.

[2]

- (b) Including the extra data you have entered for Tanya, complete the following table.

	Median in £	Range in £	Mode in £
NewKey			
eLime			

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[4]

END OF PAPER

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