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Practice Paper A  
Paper 2

Name: \_\_\_\_\_

Class: \_\_\_\_\_

Teacher: \_\_\_\_\_

Date: \_\_\_\_\_

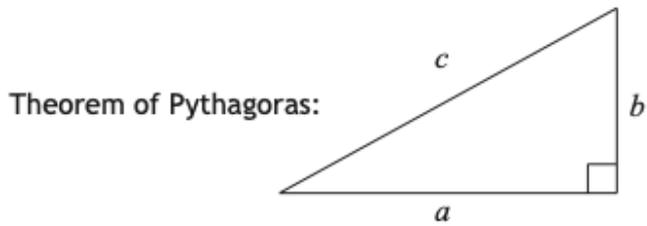
You may **NOT** use a calculator.

Full credit will be given only where the solution contains appropriate working.

## FORMULAE LIST

Circumference of a circle:  $C = \pi d$

Area of a circle:  $A = \pi r^2$



$$a^2 + b^2 = c^2$$

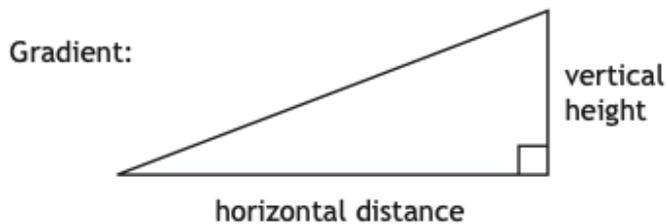
Volume of a cylinder:  $V = \pi r^2 h$

Volume of a prism:  $V = Ah$

Volume of a cone:  $V = \frac{1}{3} \pi r^2 h$

Volume of a sphere:  $V = \frac{4}{3} \pi r^3$

Standard deviation:  $s = \sqrt{\frac{\sum(x - \bar{x})^2}{n-1}} = \sqrt{\frac{\sum x^2 - (\sum x)^2/n}{n-1}}$ , where  $n$  is the sample size.



$$\text{gradient} = \frac{\text{vertical height}}{\text{horizontal distance}}$$

**All questions should be attempted**

Do not write  
in this  
margin.

*Marks*

1. Fiona buys a house for £78,000  
The price of the house increases by 3% annually for 3 years.  
The price increase goes up to 4.5% the following two years

- a) What is the value of the house after 5 years?  
Give you answer to the nearest thousand

**5**

Fiona then sells the house for £109,000.

- b) Using the **original** price of the house find the percentage profit.

**2**

Marks

2. Mairead takes out a loan of £5800  
The interest and administration fee is 5.5% of the loan amount.  
The total amount will be paid back in 10 equal monthly payments.  
Calculate the monthly payment.

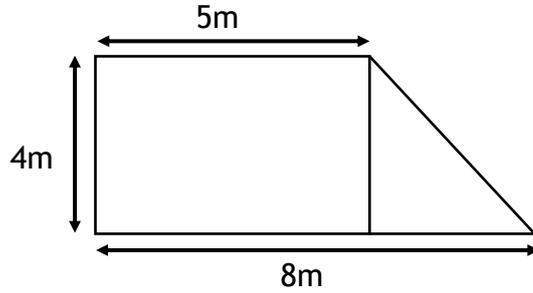
4

3. Paula, Clare and Eva are paid depending on how many leaflets they hand out.  
They hand them out in a ratio of 3:5:7 respectively.  
If Clare receives £135, how much do they make altogether

3

Marks

4. A new playground is built in Falkirk



A new fence will be built around it.

- a) Calculate the length of fence required to go around the entire playground.

3

The fence being used is sold in rolls of 6m. Each roll costs £12.40.

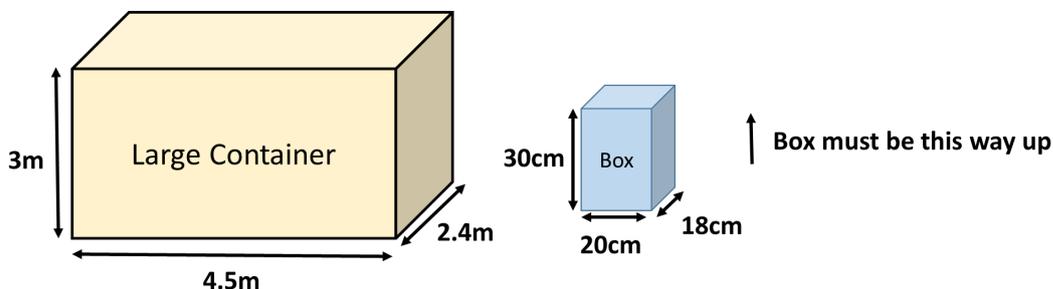
- b) Calculate the cost for the fence.

2

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Marks

5. Boxes are being stacked into a larger container with dimensions as shown below.



What is the most number of boxes you can fit inside the large container?

3

6. A shop sells premium laundry detergent in two quantities

Option 1: 500ml for £6.20

Option 2: 3.2L for £19.10

Which option is the best value for money?

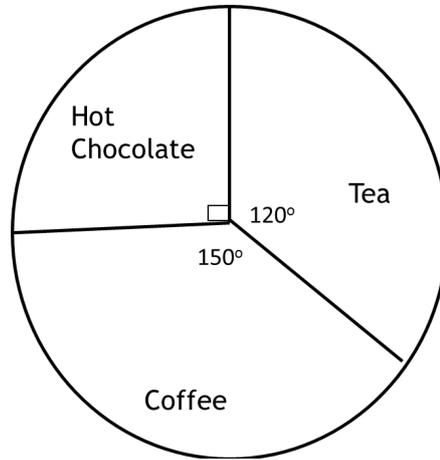
3

Vertical margin box for writing answers.

Marks

7. A chain café takes a survey in Edinburgh and Glasgow of what customers preferred drink is.

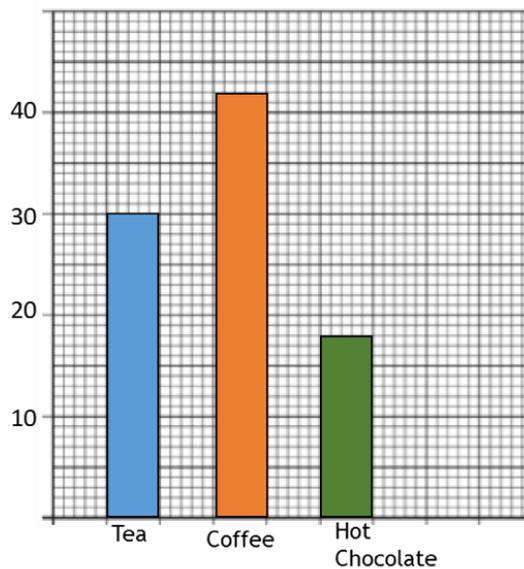
The shop in Glasgow produces their results in a bar chart as shown below.



- a) What percentage of people order tea? Give your answer to one decimal place.

2

The Edinburgh shop produced the following pie chart.



Do not write  
in this  
margin.

*Marks*

b) Make two comparisons between the shops using the bar and pie charts to justify your answers.

**2**

c) Which shop had the higher probability of the next customer ordering a coffee?

**3**

Marks

8. On Monday the number of customers who enter a shop every hour is recorded.

24    26    45    43    32    55    34    21

- a) Calculate the mean and standard deviation of the number of customers in the shop.

4

- b) On Tuesday the mean is 28 and the standard deviation is 6.4. Make two valid comparisons between the number of customers on Monday and Tuesday.

2

Marks

9. Chloe is paid £9.70 an hour.  
She works 180 hours in the month of March

a) Calculate her monthly pay.

1

Chloe pays 10% of this into her pension.  
She also pays £380 income tax and £208.40 for national insurance.

b) Calculate her take home pay

3

Chloe also has the following bills throughout the month.

Food	£120
Clothes	£145
Gas and Electricity	£80
Car	£180
Going out	£40
Other	£35

c) After all these Expenses how much will Chloe have leftover?

2

Marks

10. Stefan goes on Holiday to New York.

He exchanges £4000 into US Dollars using the following exchange rate.

£1 = 1.85 US dollars

Stefan stays in New York for one week, spending 350 dollars per day.

He then exchanges what is left into Canadian Dollars for his trip to Toronto.

1 US Dollar = 0.85 Canadian Dollars

He stays in Toronto for 4 days, spending 290 Canadian Dollars each day.

a) Calculate how much Canadian Dollars Stefan will have left at the end of his **trip to the nearest thousand.** **6**

b) Convert this amount back into pounds, to the nearest hundred. **1**

c) What percentage of the money he started with has Stefan spent? **1**

Marks

11. All the pupils in a school are asked where they are going on holiday

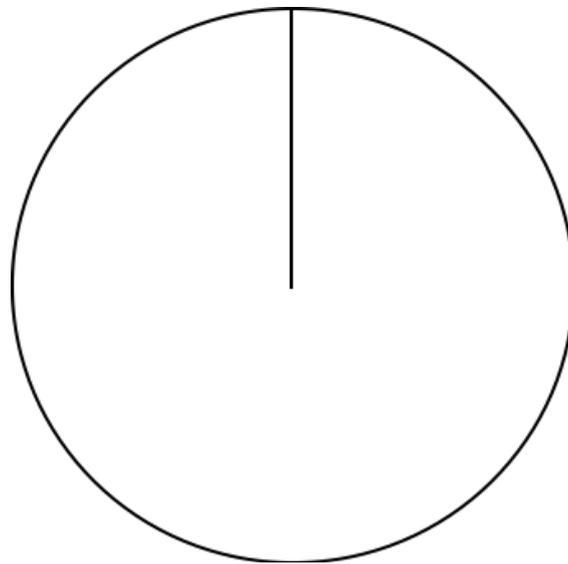
436 said **within the UK**

180 said to **Europe**

104 said **America**

Construct a pie chart to illustrate this information.

3



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Marks

12. Two planes leave an airport.

The first plane flies directly East of the airport for 200 miles.

The second plane flies on a bearing of  $150^\circ$ , for 140 miles.

a) Construct a scale drawing of these drawings using a scale of  $1\text{cm} = 20\text{ miles}$ .

4

b) How far away are the planes from each other at this point.

2

c) So far both planes have been flying for exactly 1 hour and 15 minutes. Calculate the **mean** speed of the planes in **mph**.

4

This is the end of the paper.