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Practice Paper C
Paper 1

Name: _____

Class: _____
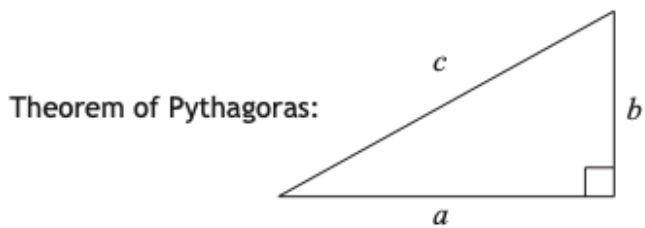
Teacher: _____

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: $A = \pi r^2$

Theorem of Pythagoras: $a^2 + b^2 = c^2$

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: $s = \sqrt{\dfrac{\Sigma(x-\bar{x})^2}{n-1}} = \sqrt{\dfrac{\Sigma x^2 - (\Sigma x)^2/n}{n-1}}$, where n is the sample size.
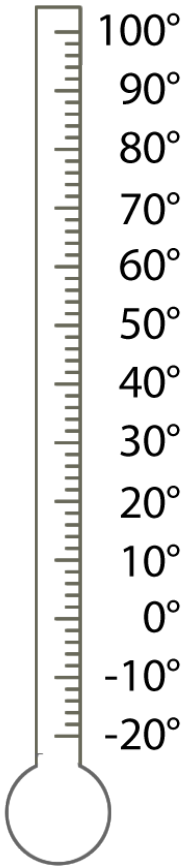
Gradient:

vertical height

horizontal distance

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

1. On a sunny day in Dubai, Miss Smith's phone tells her it is 35°C

```
100°
 90°
 80°
 70°
 60°
 50°
 40°
 30°
 20°
 10°
  0°
-10°
-20°
```

Mark on the thermometer above the temperature.   1

2. Lucy is going on holiday to Spain for her holidays. She needs to convert £2000 into Euros.

Her mum says that she will give her 2200 euros in exchange for the £2000.
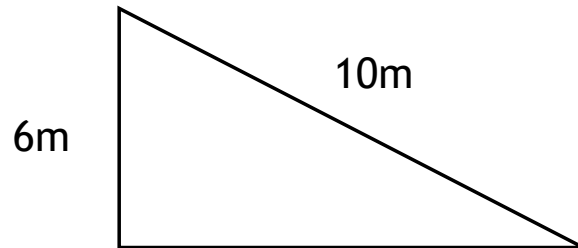
Her bank has an exchange rate of £1 = 1.15 euros. However charge a 5% commission fee after exchange rate has been calculated.

Which is the better deal?   4

3. A new ramp at a ski resort is built below.

Find the gradient of the slope as a fraction in its **simplest form**. **3**

4. James buys a new car with a sat nav.

He leaves for work at 7.45am and arrives for work at 8.25am.
The Sat Nav tells him the average speed for his journey is 8.1m/s

How far did James travel to work?
Give your answer to **2 significant figures**. **4**

5. Jade flies from Glasgow to Oslo for a business meeting.

The plane leaves Glasgow at 7.55am.
The flight takes 1 hours 35 minutes.
Oslo is 1 hour ahead of London.
It takes 35 minutes to collect his luggage.

Her company arranges for a driver to collect her from Moscow Airport.
At what time should the driver expect to collect Jade?   4

6. A group of students ask people where they prefer to watch TV and films.

- $\frac{1}{5}$ of people said they prefer the cinema

- $\frac{2}{9}$ of people said they like to watch it standard television

- The rest said online streaming services

What fraction of people said an online streaming service?   3

7. For a survey, a café writes down how many people order certain kinds of drinks in their shop.

Tea – 40

Latte – 24

Mocha – 10

a) Write down the ratio of customers ordering Tea, Latte or Mocha in a ratio in its **simplest form**.   **1**

b) Given that 200 people went to the café today, what percentage ordered either a tea, latte or Mocha?   **2**
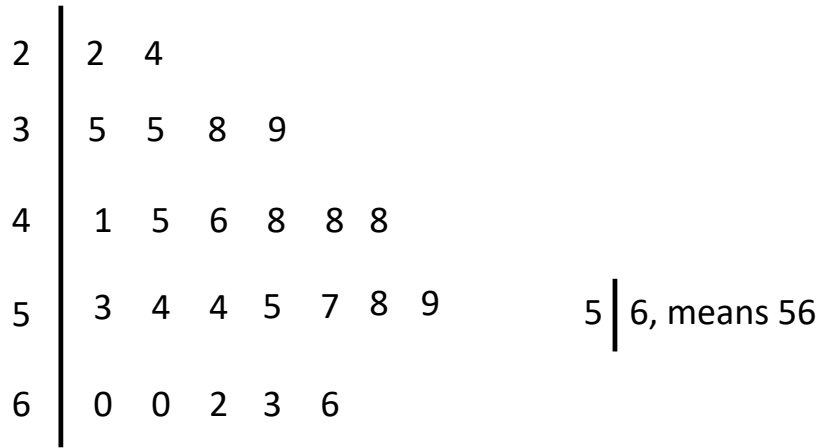
c) 45% of customers ordered a cappuccino. What is the ratio of people ordering cappuccinos to tea in its **simplest form**?   2

8. The scores in a class test were recorded on a Stem and Leaf Diagram as shown below.

```
2 | 2  4

3 | 5  5  8  9

4 | 1  5  6  8  8  8

5 | 3  4  4  5  7  8  9        5 | 6, means 56

6 | 0  0  2  3  6
```

                                            n = 24

Calculate the probability the one of the pupils selected at random got below 40 in the test.   **2**

9. Kerri thinks that the answer to the following calculation is 42.1

$$(5.5 \times 4 - 6.7) \times 2$$

Is Kerri correct?   **2**

10. A new football stadium is built in Perth
It has a capacity of 32 400
This is 20% more than their previous stadium.

    a)   What was the capacity of the old stadium?   **3**

The company hired to build the stadium said it would take 30 days to build with 40 workers.

    b)   How long would it take for 50 workers to build it?   **2**

11. Paul is buying a new TV for his family home and is looking into finance deals.

The shops offers the following for a £960 TV.

- Deposit is $\frac{1}{8}$ of advertised price.
- 10 payments of 75
- One final payment

a) What would the final payment for the TV be?   **3**

The alternative option is

- Deposit of 15%
- 18 payments of £50

b) Using the alternative option, how much more would Paul have to pay for the TV with this option?

3

12. Heart rates in beats per minute of an exercise class in Larbert is taken and recorded below before the class begins.

72	64	68	64	70	58
67	65	56	70	63	65

a) Complete the stem and leaf diagram on the chart below.

2

5 |

6 |

7 |

$5 \mid 6$, means 56

n = 12

b)   Find the median and range of the exercise class before the
       class begins.   **2**

After the class the median heartrate is 98 bpm and the range is 9.

c)   Make two valid comparisons about the heart rates of the class
before and after the class.   **2**

This is the end of the paper.