

Level 5 - Try to do the following. The answers

Multiply and divide whole numbers by 10, 100 and 1000

1.  $12 \times 10 = 120$       4.  $13 \div 10 = 1.3$   
2.  $45 \times 100 = 4500$       5.  $72 \div 100 =$   
3.  $34 \times 1000 = 34000$       6.  $25 \div 1000 =$

Add and subtract negative numbers

1.  $(+2) + (+3) = 5$       5.  $(-3) + (+5) = 2$   
2.  $(+5) - (-7) = 12$       6.  $(-12) + (-4) = 8$   
3.  $(+8) - (+3) = 5$       7.  $(-9) - (-3) = -6$   
4.  $(+12) + (-7) = 5$       8.  $(-6) - (+4) = -10$

Put numbers in order including negative numbers - Put the following numbers into the rank order - smallest to largest:

12	-3	99	100	15	9	-99	-5	0	-2
<b>-99</b>	<b>-5</b>	<b>-3</b>	<b>-2</b>	<b>0</b>	<b>9</b>	<b>12</b>	<b>15</b>	<b>99</b>	<b>100</b>

Add, subtract, multiply and divide numbers like 19.75 and 34.21

1.  $23.22 + 12.99 = 36.21$

2.  $34.21 - 21.56 = 12.65$

3.  $13.4 \times 6 = 80.4$

4.  $22.14 \div 9 = 2.46$

Simplify a fraction - Simplify the following fractions:

1.	9/12	3/4
2.	20/100	1/5
3.	72/80	9/10
4.	27/81	1/3

Work out a fraction or percentage of a number

1.	3/5 of 45 =	27
2.	24% of 60 =	14.4

Multiply or divide a three digit number by a two digit number

1.	$127 \times 23 =$	<b>2921</b>
2.	$182 \div 14 =$	<b>13</b>

Use inverse operations of approximation to check my answers

Use inverse operations to show that:

1.	$5 + 7 = 12$	<b><math>12 - 7 = 5</math></b>
2.	$9 - 5 = 4$	<b><math>4 + 5 = 9</math></b>
3.	$3 \times 4 = 12$	<b><math>12 \div 4 = 3</math></b>
4.	$18 \div 3 = 6$	<b><math>6 \times 3 = 18</math></b>
5.	$3 \times 2 + 4 = 10$	<b><math>(10 - 4) \div 2 = 3</math></b>
6.	$(13 - 3) \div 2 = 5$	<b><math>5 \times 2 + 3 = 13</math></b>
7.	$35 \div 5 - 4 = 3$	<b><math>(3 + 4) \times 5 = 35</math></b>
8.	$(13 + 7) \times 2 = 40$	<b><math>40 \div 2 - 7 = 13</math></b>

□ Use simple formulae like  $C=2n+4$

A formula to find the cost of hiring a car is:

$$C = 20d + 50$$

Where  $C$  is the cost in pounds and  $d$  is the number of days

1. Find the cost of hiring a car for 7 days

$$C = 20 \times 7 + 50$$

$$C = 140 + 50$$

$$C = \text{£}190$$

2. If the cost is £210, for how many days will the car have been hired?

$$210 = 20 \times d + 50$$

$$210 - 50 = 20d$$

$$160 = 20d$$

$$d = 8 \text{ days}$$

□ Use co-ordinates in all four quadrants

Using squared paper, plot the coordinates and join up in alphabetical order

A(4, 7)    B(3, -5)    C(-4, 2)    D(-3, -1)

Measure and draw angles to the nearest degree

Draw the angles:  $30^\circ$   $63^\circ$   $135^\circ$   $175^\circ$  and then get your partner to check that you have drawn these correctly

Use and understand the formula for the area of a rectangle

Find the area of area of a rectangle that has a length of 14.5 cm and a width o 8 cm.

$$\text{Area} = 14.5 \times 8$$

$$A = 116 \text{ cm}^2$$

Find the mean of discrete data

What is the mean of 2, 4, 7, 12, 18 and 22?

$$\text{Mean} = (2 + 4 + 7 + 12 + 18 + 22) \div 6$$

$$\text{Mean} = 65 \div 6$$

$$\text{Mean} = 10.83 \text{ (to 2 d.p.)}$$

□ Use the range and one of the averages to compare two sets of data

Compare these two sets of data using the mean and the range:

Set 1	2, 7, 12, 15, 34
Set 2	13, 13, 14, 15, 15

**Set 1**

**Range =  $34 - 2 \rightarrow$  Range is 32**

**Mean =  $(2 + 7 + 12 + 15 + 34) \div 5$**

**Mean is 14**

**Set 2**

**Range =  $15 - 13 \rightarrow$  Range is 2**

**Mean =  $(13 + 13 + 14 + 15 + 15) \div 5$**

**Mean is 14**

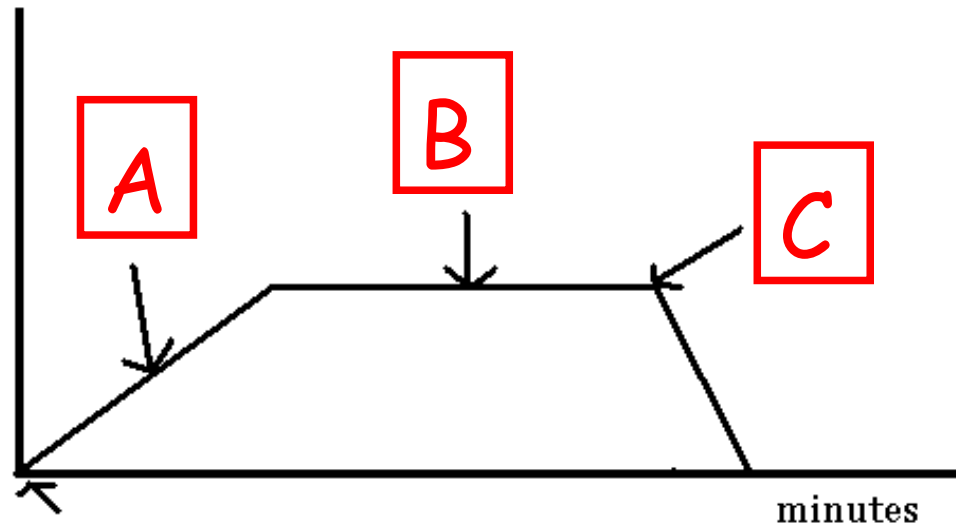
**The two sets of data have the same mean but the range of Set 1 is much bigger than the range of Set 2. This shows that the max and min values for Set 2 are similar in size whilst the max and min values in Set 1 much more.**

□ Say what diagrams and graphs show

Tell the story about baking

oven  
temp.

baking something

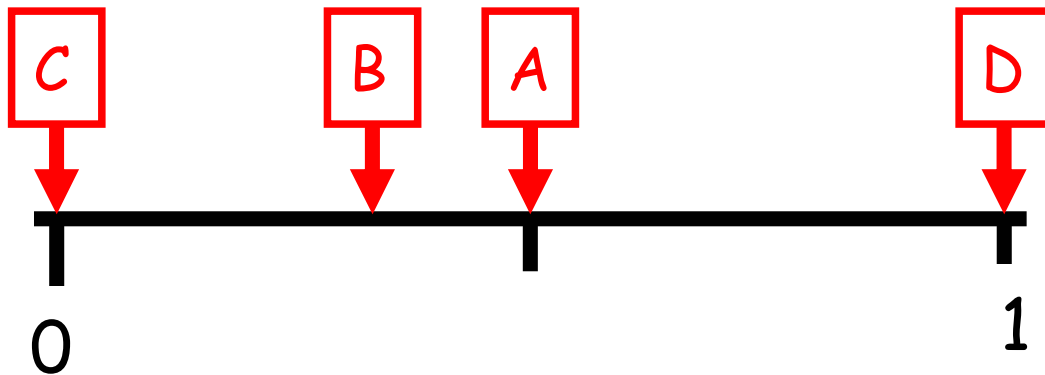


**A** The oven is turned on and the temperature rises at a constant rate. This is shown by the straight line and positive gradient.

**B** The temperature remains the same. This is shown by the horizontal line with a zero gradient.

**C** The oven is turned off and cools down at a constant rate. This is shown by the straight line with a negative gradient.

□ Use the probability scale from 0 to 1



Use the probability scale to show the probability of:

- Getting a head when a single coin is tossed
- Getting a red bead from a bag that contains 2 red and 6 black beads
- Getting a white bead from a bag that contains red and green beads
- Getting a score of 1, 2, 3, 4, 5 or 6 when a single dice is thrown

□ Understand that experiments don't always have the same outcome

Complete the table below when a coin is tossed 10 times on two separate equations:

	Number Heads	Number Tails
First 10 tosses		
Second 10 tosses		

Explain why the results are not always the same.

Probability is a way of giving a number to event that shows how often it will occur on average. The probability of a head is  $\frac{1}{2}$  and this means that in, for example, 10 tosses of the coin, you would expect to get approximately 5 heads but it does not mean that you will get exactly 5 heads each time. The more times you toss the coin the more accurate is the probability. For example, in 10 tosses you

might get 7 heads but in 1000 tosses you  
might get 520 heads and  $520/1000 \rightarrow$   
 $13/25 \rightarrow 0.52$  is much nearer to  $\frac{1}{2}$  than  
 $7/10 \rightarrow 0.7$