Student name:

# **Averages Practice Questions**

 Chris has done many English exams this year. His scores are shown below.

97 88 45

a) Calculate his mean score.

Answer: \_\_\_\_\_

b) What score does Chris need on his next test to have an overall mean score of 70? [2 marks]

Answer: \_\_\_\_\_

2.

a) Lawrence likes gardening. He has 10 rose bushes in his garden, and he counted the roses on each bush. These were his results.

7 10 6 9 0 2 5 7 0 7

i. Calculate the Mean. [2 marks]

Answer: \_\_\_\_\_

ii. Calculate the Median. [2 marks]

Answer: \_\_\_\_\_

iii. Calculate the Mode. [1 mark]

Answer: \_\_\_\_\_

Student number:

[2 marks]

## Student name:

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	iv.	Calculate the Range.		[2 marks]
			Answer:	
b)	David also enjo These were his	oys gardening but only has 6 rose bushes. s results.		
	2 3	1 25 0 5		
	i.	Calculate the Mean.		[2 marks]
			Answer:	
	ii.	Calculate the Median.		[2 marks]
			Answer:	
	iii.	Calculate the Mode.		[1 mark]
			Answer:	
	iv.	Calculate the Range.		[2 marks]
			Answer:	
c)	By comparing gardener? Writ	the mean number of roses for Lawrence an te your answer in full sentences.	d David, who is the bett	er [2 marks]
				_

Outliers	外れ値(集団から大きく外れている値)	
Spread	広がり具合、散らばり具合	
Represent	を表す、を代表する	
Deviation	偏差(標準となる数値、平均値などからの偏り)	
Observations	観測	
Observed	観測された	

# What does it 'Mean'?

Activity 1: Listen to the presentation and fill in the missing information in the table below.

	Advantages	Disadvantages
Mode		It doesn't use all the data
Median		Takes a long time to calculate for large sets of data
Mean	Uses all the data and is well known	
Range		Is affected by outliers

### Interquartile Range – IQR

The IQR describes the middle 50% of values when ordered from lowest to highest.

#### Example

The following data shows the number of Haribo in each packet. There are 8 packets.

*6 11 2 5 10 9 5 7* 

Calculate the interquartile range.

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#### Activity 2: Answer the question below. You can work with your partner.

1. The following data shows how many songs are on each of Emma's CDs she has at home.

10 9 10 12 10 9 14 7 11 12

Calculate interquartile range.

[2 marks]

Answer: \_\_\_\_\_

#### Standard Deviation - σ

Standard deviation is a measure of how spread out the data is from the mean.

#### Example

Five friends measured the height of their dogs (in millimeters).

The heights at the shoulders are: 600mm, 470mm, 170mm, 430mm and 300mm.

Step 1: Calculate the mean -  $\mu$ 

Step 2: Calculate the difference. Subtract the mean from each of the dogs' heights -  $(x_i - \mu)$ .

Step 3: Calculate the variance -  $\sigma^2$ 

Step 4: Calculate the Standard Deviation –  $\sigma$ 

### What does this tell us about the data?

- A low standard deviation shows the data isn't widely spread