

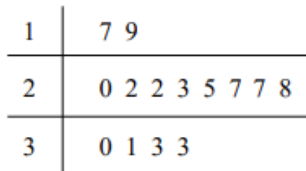
# CORE MATHS Transition Task

**QR CODES  
TO SEE  
EXAMPLES!**

Name: .....

Welcome to Core Maths! These transition tasks are designed as a way to re-familiarise yourself with some of the key statistical concepts you did at GCSE, as well as introduce you to some of the more interesting problem-solving questions that play a major part of the course. Use the QR codes to help you if needed and give it to Mr Knight/Mr Cousins at the beginning of next year. Enjoy!

Here is a stem and leaf diagram showing the ages of some footballers.



Key: 1 | 7 = 17 years old

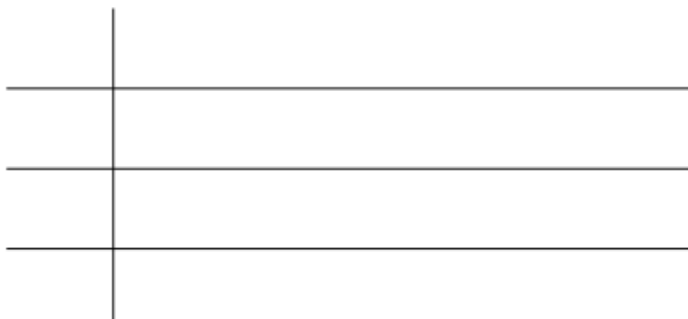
- (a) Work out the range. (1)
- (b) Work out the median age. (2)

Here are scores of 18 students in a test.

86 91 65 77 60 91  
88 75 65 78 70 63  
72 69 63 70 64 67



- (a) Draw an ordered stem and leaf diagram to show this information.



Key:

(3)

A student is selected at random

- (b) Work out the probability that this student scored more than 80.

Using Google (or any search engine!), find:

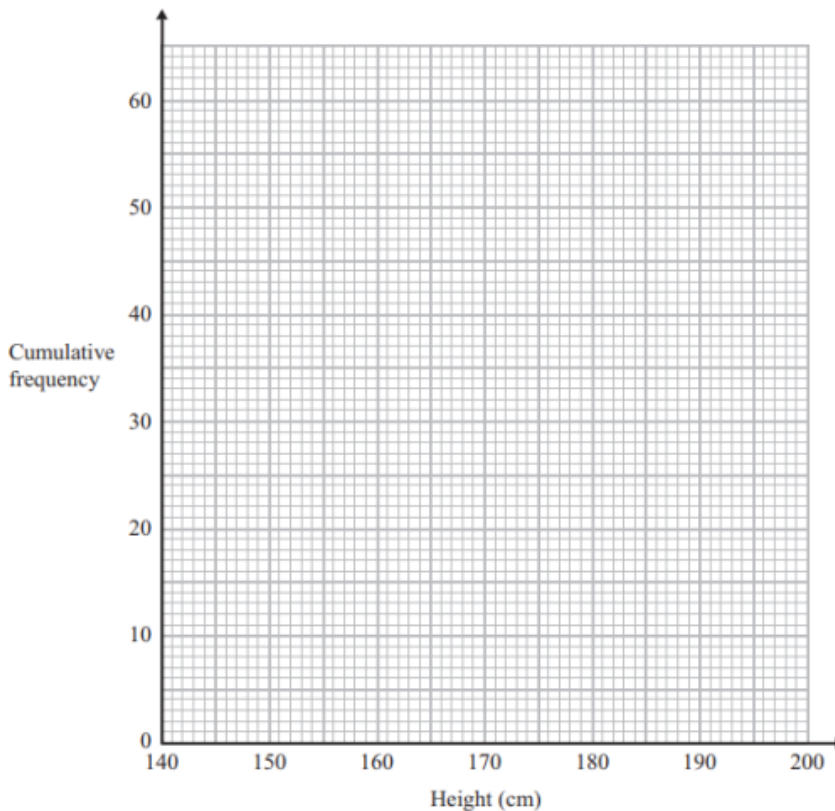
- a) The population of the UK
- b) The population of Bristol
- c) The number of WH Smiths stores in the country
- d) How long the M4 is
- e) How many litres of milk are sold per day in the UK

The cumulative frequency table shows the height, in cm, of some tomato plants.

Height	Cumulative Frequency
$140 < h \leq 150$	7
$140 < h \leq 160$	17
$140 < h \leq 170$	32
$140 < h \leq 180$	51
$140 < h \leq 190$	57
$140 < h \leq 200$	60



(a) On the grid, plot a cumulative frequency graph for this information.



(2)

(b) Find the median height.

.....cm  
(1)

Read this article and answer the questions:

[You could cook while on the toilet: a night in one of Tokyo's micro-apartments | Japan | The Guardian](#)

1. What is the size of each apartment, on average?
2. How high are the ceilings?
3. What is the rent for one of these apartments?
4. What was the conversion rate of pounds to yen on the day this article was written?
5. How many of the 1500 micro-apartments are occupied? (use the occupancy rate)
6. Write down what you think the correlation is for these:
  - Amount of time cooking while sat on the toilet and illness
  - Size of apartment and amount paid in rent
  - Amount saved in a month and size of apartment
  - Amount paid in rent and meals eaten out a year

Adam is measuring the heights in cm of his tomato plants.

Height (cm)	Frequency
$140 < h \leq 150$	7
$150 < h \leq 160$	10
$160 < h \leq 170$	15
$170 < h \leq 180$	19
$180 < h \leq 200$	9



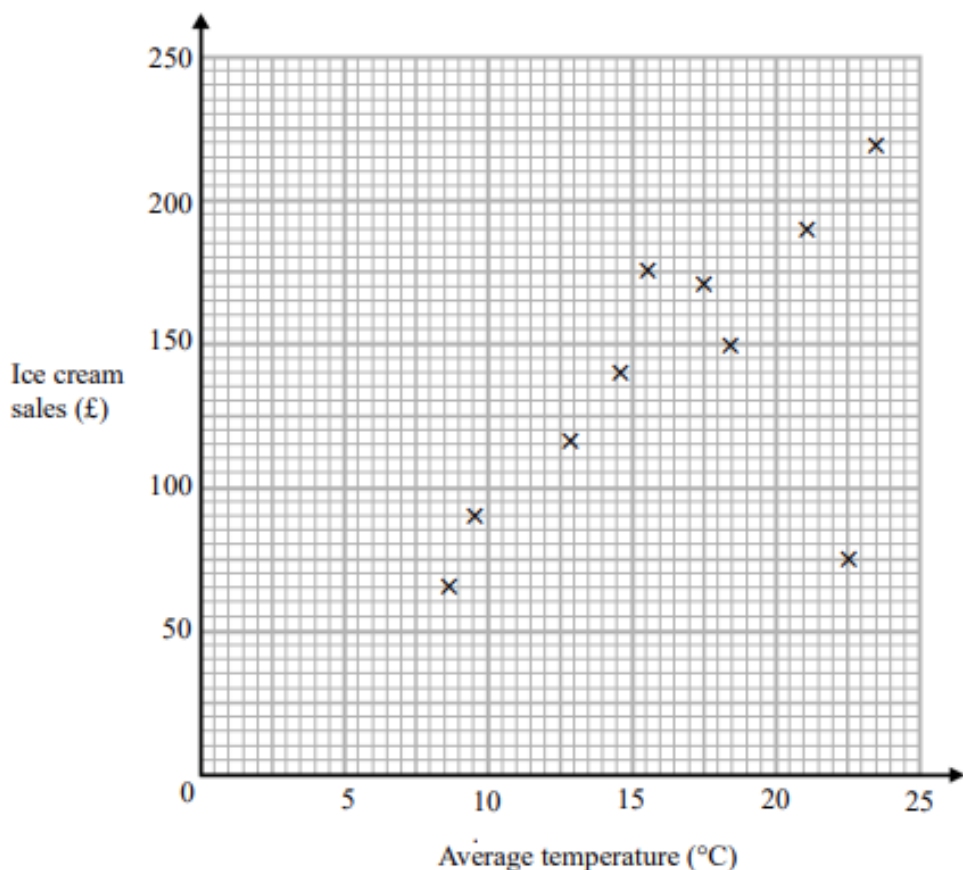
(a) Estimate the mean height.  
Give your answer correct to 1 decimal place.

(b) Explain why your answer to part (a) is an estimate.

The average daytime temperature for 10 days is recorded.  
A shop also records its ice cream sales for each of the 10 days.



The scatter graph shows this information.



(a) What type of correlation does the scatter graph show?

.....  
(1)

(b) One of the points is an outlier. Write down the coordinates for this point.

(.....), (.....)  
(1)

(c) On another day the temperature was  $12^{\circ}$ .  
Estimate the ice cream sales on this day.

£.....  
(2)

Year 7	Year 8	Year 9	Year 10
72	108	66	54

A stratified sample of 50 is planned.  
Calculate the number of people that should be sampled from each year group.

Revision for this topic

[www.corbettmaths.com/contents](http://www.corbettmaths.com/contents)

## Video 281



Year 7 .....

Year 8 .....

Year 9 .....

Year 10 .....

(3)

A full water tank holds 500 litres.  
The tank begins to leak water and is losing 14% of its contents every hour.  
Find how much water is left in the tank after 8 hours.

The height of a tree increases by 60% each year.  
When planted the tree was 40cm tall.  
How tall will the tree be in 5 years time.

Carrie invests £800 for 4 years at 3% interest per year.  
How much interest does she earn?

An energy bar contains 2.1g of protein.  
6% of the bar is protein.  
What is the total mass of the bar?

Swansea is a city in Wales.  
The population of Swansea is 240,000  
This population is 7.5% of the total population of Wales.  
What is the total population of Wales?



Heather invested money into a savers bank account.  
Each year the money in the account earns 10% interest.  
After one year, the total amount of money in the account was £2200  
How much did Heather invest?