

ANALYSING & REPRESENTING DATA

13 MARCH 2014



Lesson Description

In this lesson we

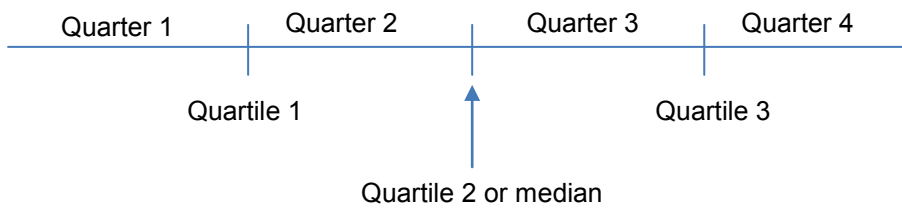
- Introduced and cover questions relating to:
 - Medians
 - Quartiles 1, 2 and 3
 - Quartile Range
 - Box-and-Whisker Plots
 - Quartiles



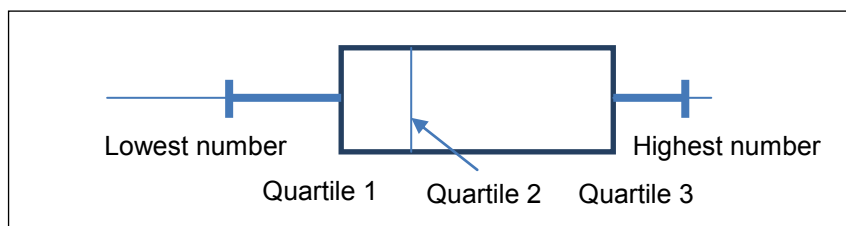
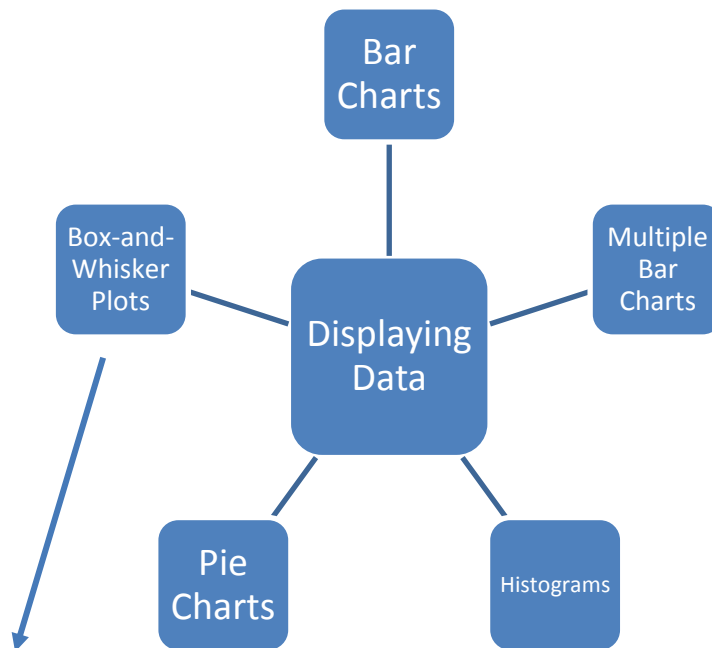
Summary

Median: After arranging the data in order, the median is the centre of that arranged data.

All Data can be broken into 4 quarters



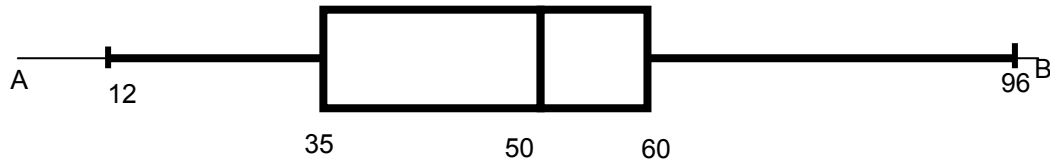
Quartile Range = Quartile 3 – Quartile 1





Test Yourself

Consider the following Box and Whisker Plot, which illustrates the results of a class test which was recorded as percentages.



Question 1

The median is:

- A 12
- B 35
- C 50
- D 60

Question 2

Quartile 1 is:

- A 12
- B 35
- C 50
- D 60

Question 3

Quartile 3 is:

- A 35
- B 50
- C 60
- D 96

Question 4

Quartile 2 is:

- A 35
- B 50
- C 60
- D 96

Question 5

The range is:

- A 46
- B 84
- C 38
- D 25

Question 6

The inter-quartile range is:

- A 46
- B 84
- C 38
- D 25

Question 7

What could the lowest value at A be?

- A 12
- B 11
- C 0
- D 35

Question 8

What could the highest possible value of A be?

- A 60
- B 61
- C 96
- D 100

Question 9

What percentage of students got lower than 60%?

- A 100%
- B 75%
- C 50%
- D 25%

notes for...

Question 10

How many students wrote the test?

- A 100
- B 96
- C 50
- D Cannot tell from the given information



Improve your Skills

Question 1

Consider the data below which shows the result of a class test which was out of 10 marks:

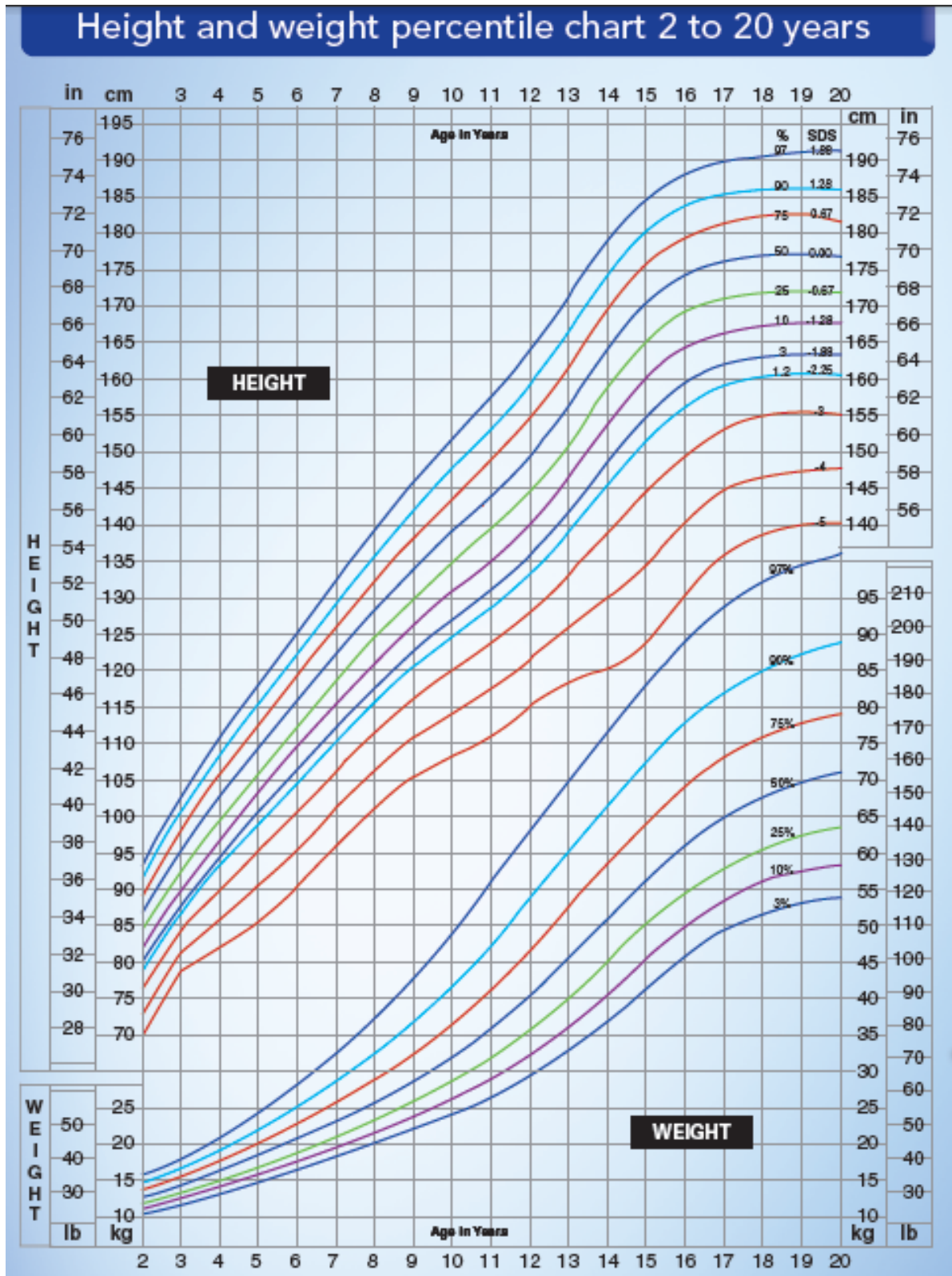
4	6	7	7	9	4	6	7
9	5	8	4	2	8	6	7

- 1.1 Determine the median.
- 1.2 What is another name for Quartile 1?
- 1.3 Determine the value of quartile 1.
- 1.4 What is another name for quartile 3?
- 1.5 Determine the value of Quartile 3.
- 1.6 Calculate the range of data.
- 1.7 Calculate the inter-quartile range.
- 1.8 Draw a box-and-whisker plot on the number line provided.



notes for...

Question 2



- 2.1 On what percentile does a 7-year old lie if he is 130cm high?
- 2.2 Explain what your answer in 2.1 means.
- 2.3 A 19 year-old who weighs 70 kg lies on which percentile?
- 2.4 What does your answer to 2.3 mean?

learn more, learn xtra!

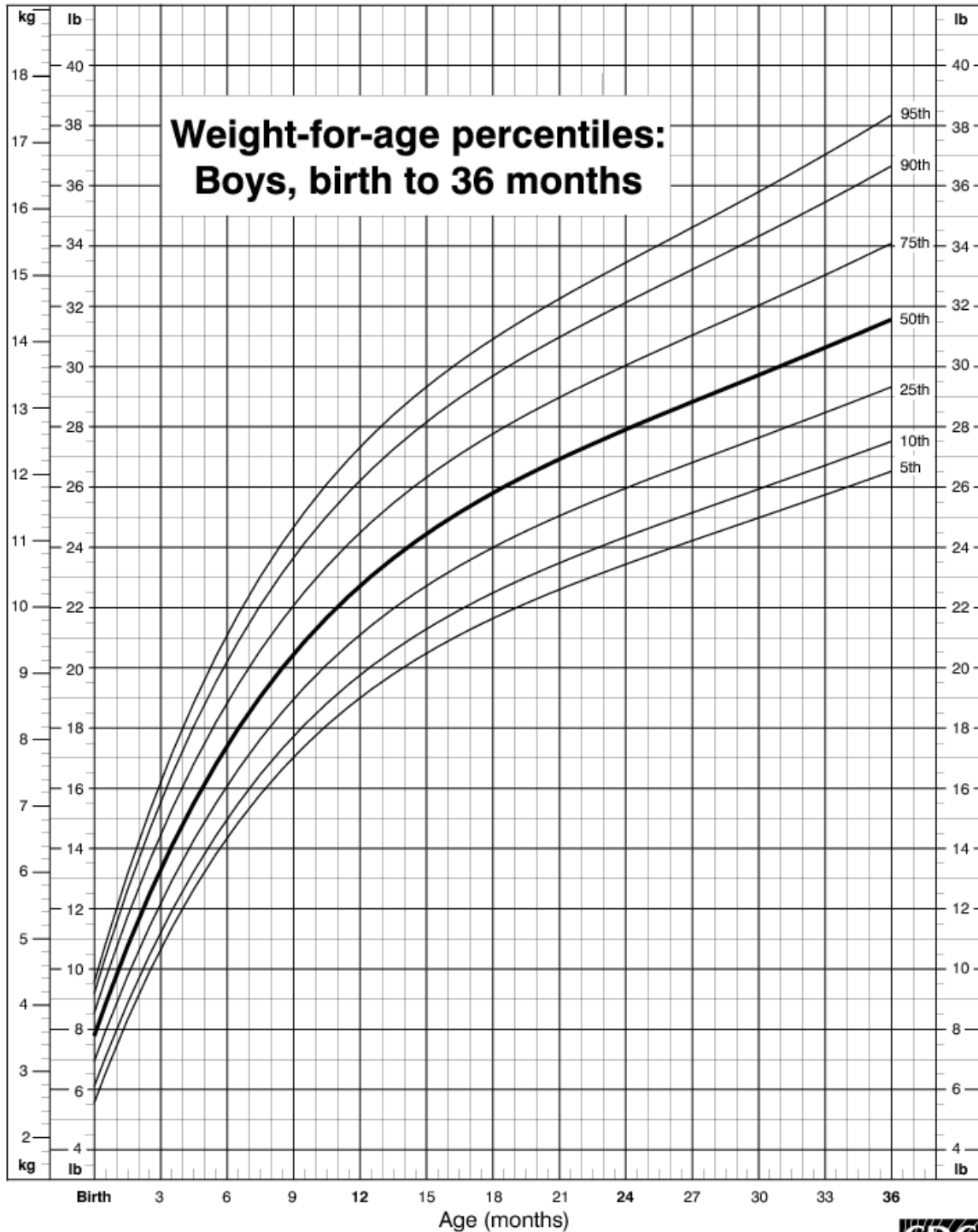
notes for...

- 2.5 How heavy is a 15 year-old who lies on the 25th percentile?
- 2.6 How old is a young man who weighs 40kg and lies on the 25th percentile?
- 2.7 How tall is a 17 year-old who lies on the 97th percentile?
- 2.8 How old is a young man who is on the 10th percentile and is 135cm tall?

Question 3

Consider the graph below:

CDC Growth Charts: United States



notes for...

- 3.1) What is another name for the 50th percentile?
- 3.2) What does the 95th percentile mean?
- 3.3) What is the 75th percentile for a two year old boy?
- 3.4) Should a parent be concerned if their son weighs 2,5kg at birth? Explain.
- 3.5) It is estimated that approximately four million babies are born in the United States each year.
 - a) Write four million in scientific notation
 - b) Write four million as a number
 - c) You are told your American son's weight is in the 75th percentile when he is born.
 - i) What does this mean?
 - ii) How many babies will be born heavier than your son that year?
 - iii) How many babies will be born lighter than your son that year?
- 3.6) What would be a "good" weight for your son at birth? Explain.
- 3.7) Copy and complete the following paragraph.

At 30 months, a boy will weigh 26 pounds, or _____ kg. He will be on the _____ percentile, which means The average median weight for a 2 year old boy living in _____ is _____ pounds, which is equivalent to _____ kilograms.