



Warm Up Grade 7



The table shows the heights and circumferences of 5 trees.

- a) What is the mean height? $\frac{80}{5} = 16m$
- b) What is the mean circumference? $310 \div 5 = 62cm$
- c) What is the mode of the heights? $20m$
- d) What is the mode of the circumferences? $82cm$

Tree	Height (m)	Circumference (cm)
Oak	$\rightarrow 20$	65
Elm	16	$\rightarrow 82$
Maple	$\rightarrow 20$	60
Birch	15	$\rightarrow 82$
Poplar	9	21
Sum	80	310

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1. a) 3, 4, 4, 5

$$\text{mean} = \frac{16}{4}$$

$$= 4$$

b) 1, 7, 3, 3, 1

$$\text{mean} = \frac{15}{5}$$

$$= 3$$

c) 2, 2, 6, 1, 3, 4

$$\text{mean} = \frac{18}{6}$$

$$= 3$$

2 a) 2, 4, 7, 4, 8, 9, 12, 4, 7, 3

3

$$\text{mean} = \frac{60}{10}$$

$$= 6$$

mode 4

b) 24, 34, 44, 31, 39, 32

$$\text{mean} = \frac{204}{6}$$

$$= 34$$

mode - no mode

4.
 9, 11, 13, 15, 20, 10, 12, 15, 10, 15
 ✓ ✓ ✓ ✓ ✓ ✓ ✓

a) mean = $\frac{130}{10}$ b) mode 15
 = 13

c) If 19 and 25 were added:

mean $\frac{174}{12}$
 = 14.5

mode doesn't change

5. 10, 26, 18, 34, 64, 18, 21, 32, 21, 54,
 36, 16, 30, 18, 25, 69, 39, 24, 13, 22

mean $\frac{590}{20}$ mode 18
 29.5

b) Any list of ages would be fine as long as 36 occurred the most.

6. a) Games Played

45 60 64 61

mean $\frac{220}{4}$ mode - no mode

55

b) Goals

6 20 32 35

mean $\frac{93}{4}$ mode - no mode

23.25

c) Assist

10 28 39 39

mean $\frac{116}{4}$ mode 39

29

d) Points

16 48 71 74

mean $\frac{209}{4}$ mode - no mode

52.25

7. a) equally popular
volley ball and soccer

b) You can use the bar graph to find because the longest bar is the one that occurred most often

c) 750, 700, 1125, 750, 650, 1500,
1800, 600, 800, 1350

$$\text{mean } \frac{10\,025}{10} = 1002.5$$

8. 6 3 7 9 _____

a) mean = 6

so the sum of the numbers
must $6 \times 6 = 36$

$$6 + 3 + 7 + 9 = 25$$

The other 2 numbers had to add
to give 11.

b) mode 3, mean 6

6 3 7 9 3 _____

sum has to be 36, it is 28,
so the last number is 8.

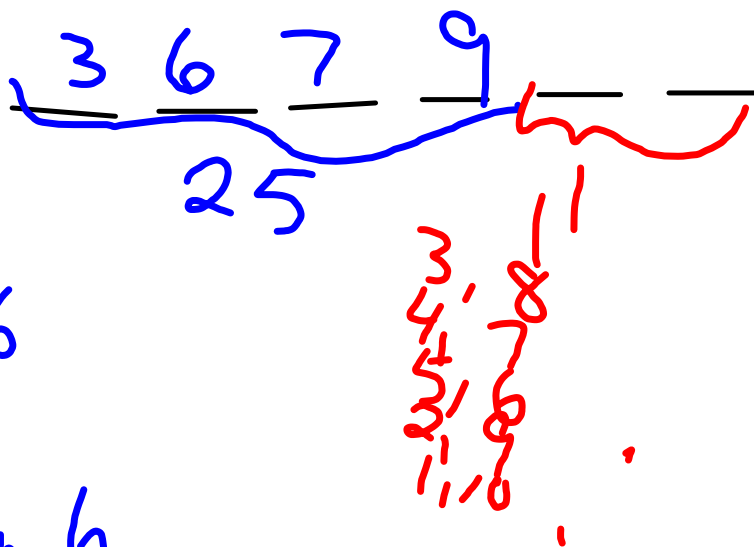
8. set of 6 numbers
3, 6, 7, 9

a) mean = 6

$$\text{mean} = \frac{\text{sum}}{6}$$

$$6 = \frac{\text{sum}}{6}$$

$$6 = \frac{36}{6} \quad \text{sum} = 36$$



b) 6 numb.
mode 3 mean 6
Sum 36

3 3 6 7 9 8

Median and Range

Median

The median is another average. It is **the middle number** of a set of **ordered** data. To find the median, list the numbers in order then find the middle number.

If you have 15 pieces of data, the 8th number will be the middle number (there are 7 numbers before and 7 numbers after it)

If you have 63 pieces of data, the 32nd number will be the middle

What happens if you have an even number of data?

If you have an even number of data, find the 2 middle numbers, add them, then divide by 2

Range Big - Small

What is the range of a set of data?

The range is the difference between the highest and lowest numbers.

Examples:

Find the median and range for the following:

(a) ~~15~~, ~~10~~, ~~19~~, ~~11~~, ~~16~~

Need to put in order

10, 11, 15, 16, 19

Median = 15

Range \Rightarrow Big - Small
 $19 - 10$
 $= 9$

(b) ~~28~~, ~~31~~, ~~36~~, ~~24~~, ~~29~~, ~~33~~, ~~79~~, ~~32~~

24, 28, 29, 31, 32, 33, 36, 79

↓
2 middle

Median = $\frac{31 + 32}{2} = \frac{63}{2}$
 $= 31.5$

Range = Big - Small
 $= 79 - 24$
 $= 55$

Class/Homework

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#1, #2, #3, #6, #7a

Unit 7 Data Analysis (Part 1) Test
will be _____

Topics: Mean, Median, Mode, Range, Outliers

8 Multiple Choice

3 Short Response

(VERY similar To wamp ups)

1. Find the median and the range of each set of data.
 - a) 85, 80, 100, 90, 85, 95, 90
 - b) 12 kg, 61 kg, 85 kg, 52 kg, 19 kg, 15 kg, 21 kg, 30 kg

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2. The Grade 7 students in two combined Grades 6 and 7 classes wrote the same quiz, marked out of 15.
Here are the results:
Class A: 8, 9, 9, 12, 12, 13, 13, 14, 15, 15
Class B: 10, 10, 11, 11, 12, 12, 13, 13, 14, 14
 - a) Find the median mark for each class.
 - b) Find the range of each set of marks.
 - c) Which class do you think is doing better? Explain.
3. a) Find the mean, median, and mode for each data set.
 - i) 4, 5, 7, 8, 11
 - ii) 50, 55, 65, 70, 70, 50
 - iii) 7, 63, 71, 68, 71
 - iv) 6, 13, 13, 13, 20b) Which data sets have:
 - the same values for the mean and median?
What do you notice about the numbers in each set?
 - the same values for the mean, median, and mode?
What do you notice about the numbers in each set?
 - different values for the mean, median, and mode?
What do you notice about the numbers in each set?

- 4. Assessment Focus** Write two different data sets with 6 numbers, so that:
- The mode is 100. The median and the mean are equal.
 - The mode is 100. The mean is less than the median.
- Show your work.
- 5.** a) The median height of ten 12-year-old girls is 158 cm.
What might the heights be? How do you know?
- b) The mode height of ten 12-year-old boys is 163 cm.
What might the heights be? How do you know?
- 6.** Jamal was training for a 400-m race. His times, in seconds, for the first five races were: 120, 118, 138, 124, 118
- Find the median and mode times.
 - Jamal wants his median time after 6 races to be 121 s.
What time must he get in his 6th race? Show your work.
 - Suppose Jamal fell during one race and recorded a time of 210 s.
Which of the mean, median, and mode would be most affected? Explain.



7. In 2005, the Edmonton Miners hosted The Minto Cup Junior A Lacrosse Championship. Here are the 2005 statistics, as of June 30, 2005, for 10 players on the team.

Player	Games	Goals	Assists	Points	Penalty Minutes
Jeremy Boyd	13	2	8	10	54
Dan Claffey	11	3	11	14	33
Dalen Crouse	11	10	10	20	6
Andrew Dixon	15	4	5	10	47
Dan Hartzell	11	5	21	26	8
Cole Howell	12	21	13	34	0
Aiden Inglis	12	3	4	7	23
Ryan Polny	17	7	14	21	2
Chris Schmidt	5	8	4	12	2
Neil Tichkowsky	17	34	19	53	8

- a) Calculate the mean, the median, and the mode of each set of data.
- b) Make up a question about the mean, the median, or the mode that can be answered using these data. Answer your question.

