



CAMI Mathematics: Grade 10

GRADE 10 Statistics

10.10 Statistics

1.1 Calculate the mean, median and mode of the given data values.

- (a) 4 ; 3 ; 4
- (b) 8 ; 8 ; 8
- (c) 2 ; 1 ; 7 ; 4 ; 4 ; 8 ; 4 ; 4 ; 7 ; 7
- (d) 4 ; 5 ; 5 ; 7 ; 7 ; 1 ; 5 ; 5 ; 1
- (e) 6 ; 4 ; 9 ; 9 ; 9 ; 9

1.2 Grouped data.

- (a) Between the students in a class, the mass of the lightest student is 40kg and the heaviest student weighs 80kg.
- What is the range?
 - If you need 8 class intervals, what should the length of each interval be?
 - With which value should the first interval start?
 - What is the first class interval?
 - Give the third class interval.
- (b) Consider the following class intervals:
11 – 16 ; 17 – 22 ; 23 – 28 ; 29 – 34
- What are the five class boundaries
 - What are the four class midpoints?

1.3 Five number summary and box and whiskers diagram.

- (a) Use the given data values to answer the questions.
1 21 46 57 87 92 94 114 124 135 174 176 198
- What is the range?
 - What is the median?
 - What is the lower quartile?
 - What is the upper quartile?
 - What is the inter quartile range?
- (b) Use the given data values to answer the questions.
42 45 58 87 77 54 65 12 25 25 59 60
- What is the range?

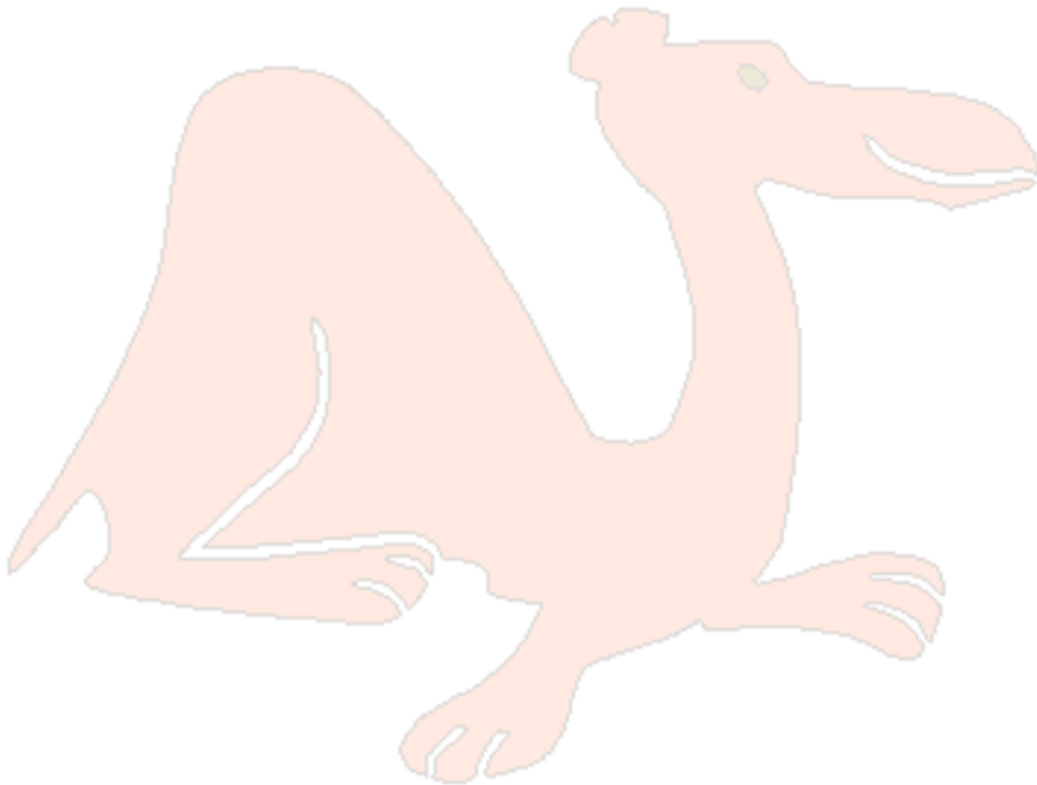


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- What is the median?
- What is the lower quartile?
- What is the upper quartile?
- What is the inter quartile range?

(c) Use the following data values to complete a box and whisker diagram.
86 86 87 89 89 89 90 91 93 98 99 100

- What is the maximum value?
- What is the minimum value?
- What is the median?
- What is the lowest quartile?
- What is the upper quartile?
- Complete the box and whisker diagram.





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MEMO

1.1 Calculate the mean, median and mode of the given data values.
[10.3.1.3; 10.3.1.4]

(a) 4 ; 3 ; 4

$$\text{Mean} = \frac{4+3+4}{3} = 3.7$$

$$\text{Median} = 4$$

$$\text{Mode} = 4$$

(b) 8 ; 8 ; 8

$$\text{Mean} = \frac{8+8+8}{3} = 8$$

$$\text{Median} = 8$$

$$\text{Mode} = 8$$

(c) 2 ; 1 ; 7 ; 4 ; 4 ; 8 ; 4 ; 4 ; 7 ; 7

Order: 1 ; 2 ; 4 ; 4 ; 4 ; 4 ; 7 ; 7 ; 7 ; 8

$$\text{Mean} = \frac{2+1+7+4+4+8+4+4+7+7}{10} = 4.8$$

$$\text{Median} = 4$$

$$\text{Mode} = 4$$

(d) 4 ; 5 ; 5 ; 7 ; 7 ; 1 ; 5 ; 5 ; 1

Order: 1 ; 1 ; 4 ; 5 ; 5 ; 5 ; 5 ; 7 ; 7

$$\text{Mean} = \frac{1+1+4+5+5+5+5+7+7}{9} = 4.4$$

$$\text{Median} = 5$$

$$\text{Mode} = 5$$

(e) 6 ; 4 ; 9 ; 9 ; 9 ; 9

Order: 4 ; 6 ; 9 ; 9 ; 9 ; 9

$$\text{Mean} = \frac{4+6+9+9+9+9}{6} = 7.7$$



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Median = 9

Mode = 9

1.2 Grouped data. [10.3.4.1; 10.3.4.2; 10.5.2]

(a) Between the students in a class, the mass of the lightest student is 40kg and the heaviest student weighs 80kg.

- 40
- 6
- 39
- (39 - 44)
- (51 - 56)

(b) 11 - 16 ; 17 - 22 ; 23 - 28 ; 29 - 34

- 10.5 ; 16.5 ; 22.5 ; 28.5 ; 34.5
- 13.5 ; 19.5 ; 25.5 ; 31.5

1.3 Box and whiskers diagram. [10.5.1; 10.5.2; 10.5.3]

(a) 1 21 46 57 87 92 94 114 124 135 174 176 198

- $198 - 1 = 197$
- 94
- 51.5
- 154.5
- 103

(b) 42 45 58 87 77 54 65 12 25 25 59 60

12 25 25 42 45 54 58 59 60 65 77 87

- $87 - 12 = 75$
- 56
- 33.5
- 62.5
- $62.5 - 33.5 = 29$

(c) 86 86 87 89 89 89 90 91 93 98 99 100

- 100
- 86
- 89.5
- 88



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- 95.5
- Box and whisker diagram:

