

ANSWERS: GR 11 STATISTICS

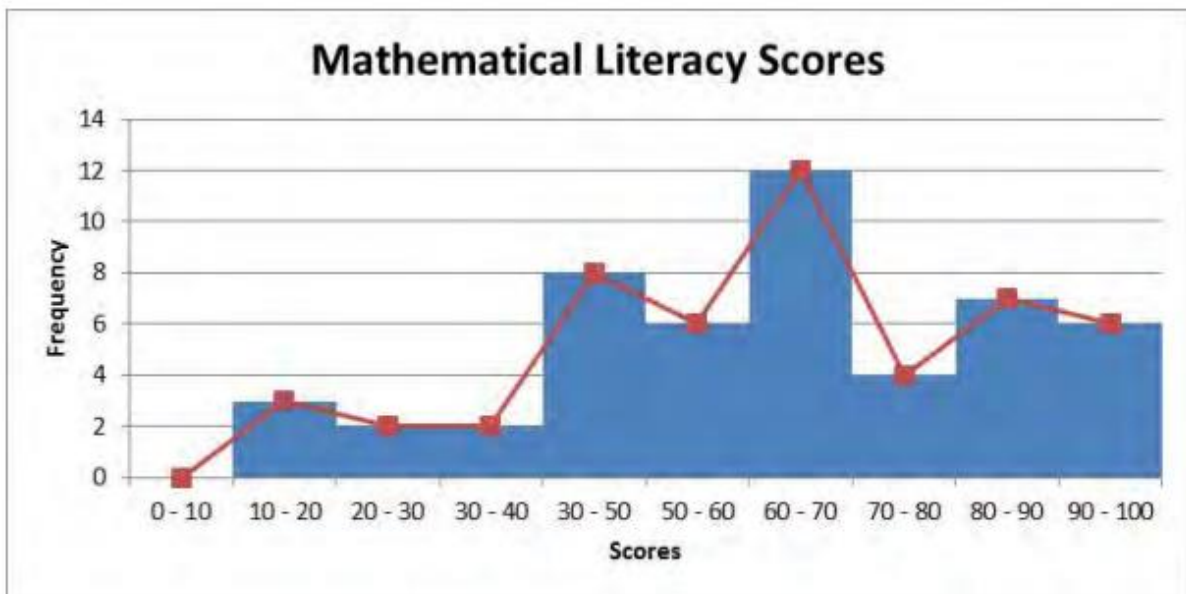
1 1.1

Interval	Frequency
$0 \leq x < 10$	0
$10 \leq x < 20$	3
$20 \leq x < 30$	2
$30 \leq x < 40$	2
$40 \leq x < 50$	8
$50 \leq x < 60$	6
$60 \leq x < 70$	12
$70 \leq x < 80$	4
$80 \leq x < 90$	7
$90 \leq x < 100$	6

1.2 Mode = 82

1.3 The median is in class interval $60 \leq x < 70$.

1.4 and 1.5



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2 2.1

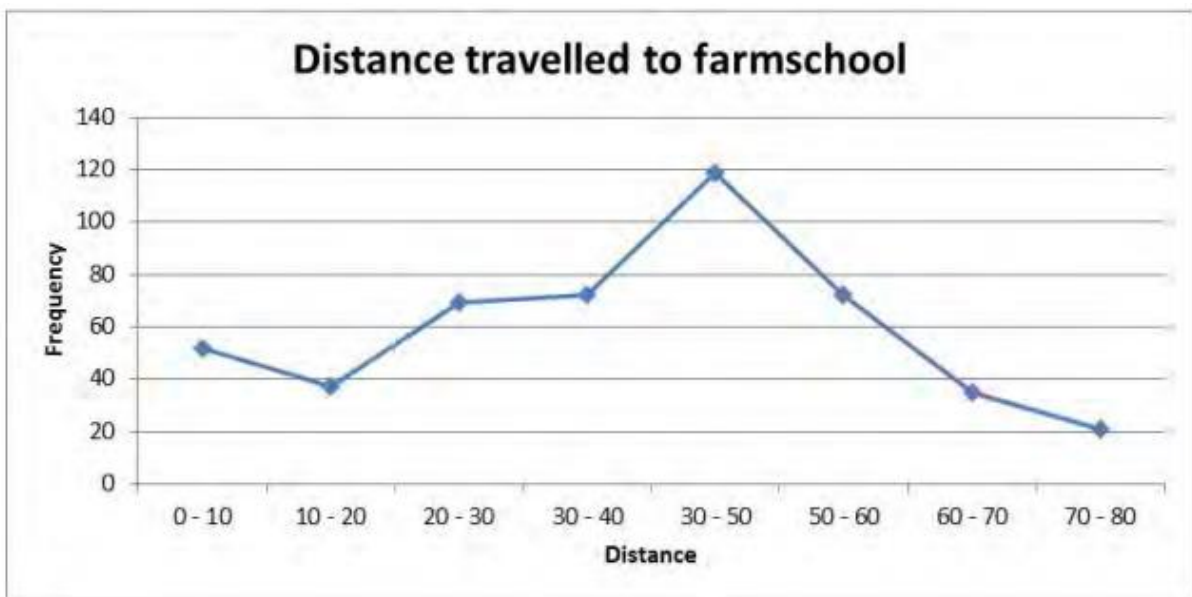
Interval	Frequency
$0 \leq x < 10$	52
$10 \leq x < 20$	37
$20 \leq x < 30$	69
$30 \leq x < 40$	72
$40 \leq x < 50$	119
$50 \leq x < 60$	72
$60 \leq x < 70$	35
$70 \leq x < 80$	21

Estimated mean:

$$\frac{52 \times 5 + 37 \times 15 + 69 \times 25 + 72 \times 35 + 119 \times 45 + 72 \times 55 + 35 \times 65 + 21 \times 75}{477} = 38,21$$

2.2 Modal class = $60 \leq x < 70$

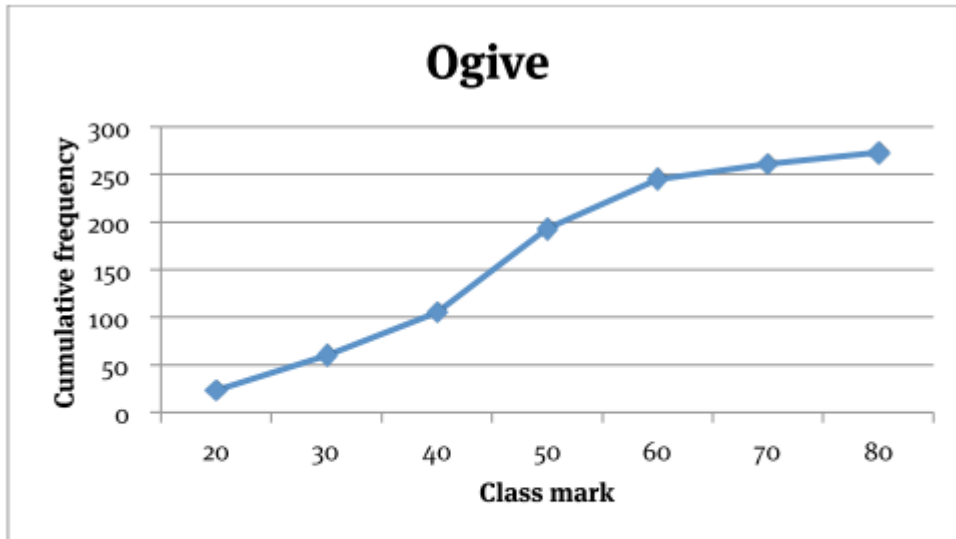
2.3



3

Interval	Frequency	Cumulative frequency	Data point
$0 \leq x < 10$	23	23	(20; 23)
$10 \leq x < 20$	37	60	(30; 60)
$20 \leq x < 30$	45	105	(40; 105)
$30 \leq x < 40$	88	193	(50; 193)
$40 \leq x < 50$	52	245	(60; 245)
$50 \leq x < 60$	16	261	(70; 261)
$60 \leq x < 70$	12	273	(80; 273)

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4 4.1 124 drivers

4.2 94 drivers

4.3

Interval	Frequency	Cumulative frequency
11 – 15	5	5
15 – 20	25	30
20 – 25	0	30
25 – 30	65	95
30 – 35	21	116
35 – 40	8	124

5
$$s^2 = \sum \frac{(x_i - \bar{x})^2}{n}$$

x_i	$x_i - \bar{x}$	$(x_i - \bar{x})^2$
155	0,11	0,0121
142	-12,89	166,1521
169	14,11	199,0921
133	-21,89	479,1721
189	34,11	1 163,4921
128	-26,89	723,0721
175	20,11	404,4121
168	13,11	171,8721
135	-19,89	395,6121

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$$\sum x_i = 1\,394$$

$$x_i = 154,89$$

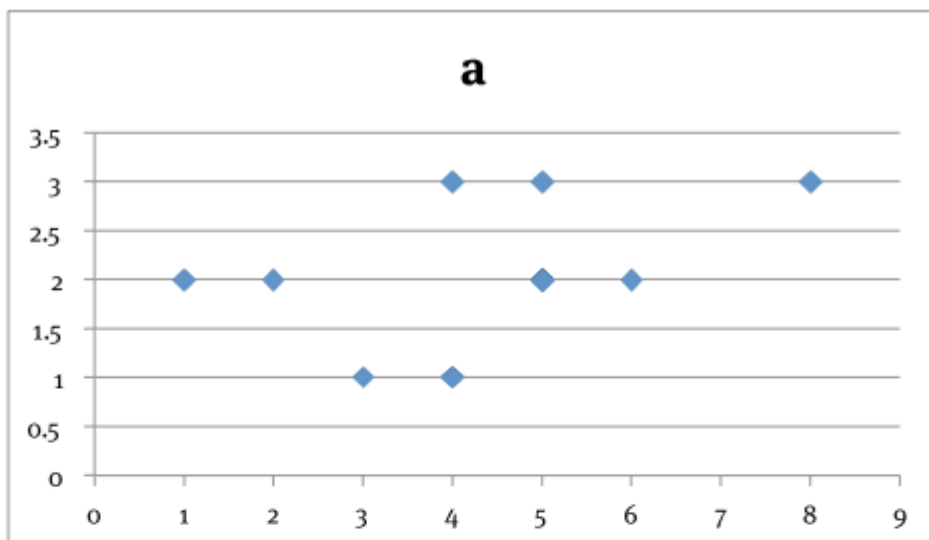
$$s^2 = \frac{3702,8889}{9} = 411,4321$$

$$\therefore s = 20,2838$$

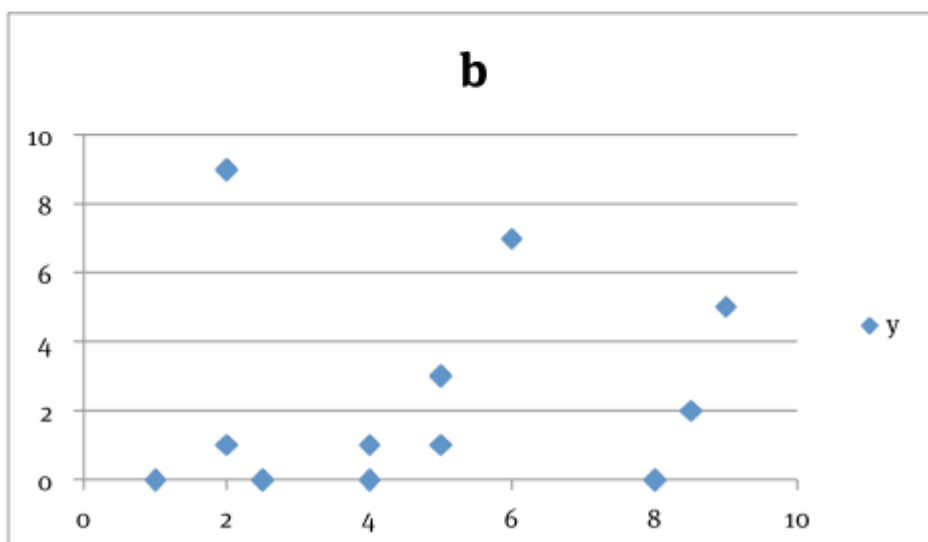
- 6 6.1 6 800
- 6.2 250
- 6.3 Less than one, which is not possible, therefore none.
- 6.4 No.
- 7 The Mathematics editor is relatively more expensive.
- 8 8.1 Mean = 130,2 seconds
- 8.2 $s^2 = \frac{1945,6}{10} = 194,56$
- $\therefore s = 13,95$
- 8.3 9,5 \approx all 10 of the student bookkeepers
- 9 9.1 Min = 15
- $Q_1 = 30$
- Median = 45
- $Q_3 = 60$
- Max = 100
- 9.2 Semi-quartile range = 156
- 9.3 The data is spread evenly.
- 9.4 The data is not skewed, it is symmetrical.

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10 10.1



10.2



10.3

