6.4.3 Solutions (6.3 Homework : Mean, Median, Mode)

GCSE Mathematics

Statistics II : Handelling and Processing Data

Answer 1

(a) Data in order is...

8	9	9	10	10	11	11	11	11	11
11	12	12	12	12	12	12	12	13	13
13	13	14	14	14	15	16			

(b) Mean $= \frac{321}{27} = 11.9$ years old

(c) Median is $\frac{27 + 1}{2} = 14^{th}$ item of data which is one of the 12 year olds

(d) Mode is 12 years old

Answer 2

Number of seedlings	1	2	3	4	5	6
Frequency	4	2	8	7	20	9
Contribution to total	4	4	24	28	100	54

mean is $\frac{214}{50} = 4.28$ That is, 4.3 seedlings

Answer 3

Number of stars	*	**	***	****	*****
Frequency	1	6	8	3	2
Contribution to total	1	12	24	12	10

mean is $\frac{59}{20} = 2.95$ That is, 3.0 stars

Answer 4

SET A (In order)

2 6 8 8 10 10 12

mean = 8

median is $\frac{7 + 1}{2}$ = 4^{th} item of data which is 8

mode = 8, 10 (bimodal)

SET B (In order)

2 2 3 4 5 6 9

mean = 4.4

median is $\frac{7 + 1}{2}$ = 4^{th} item of data which is 4

mode = 2

SET C (In order)

7 8 8 9 9 10 10 10 16

mean = 9.7

median is $\frac{9 + 1}{2}$ = 5^{th} item of data which is 9

mode = 10

SET D (In order)

12 12 13 13 14 14 16 19

mean = 14.125 That is, 14.1

median is $\frac{8 + 1}{2}$ = 4.5^{th} item of data which is $\frac{13 + 14}{2}$ = 13.5

mode = 12, 13, 14

SET E (In order)

2 3 3 4 4 4 5 5

mean = 3.75 That is, 3.8

median is $\frac{8 + 1}{2}$ = 4.5^{th} item of data which is $\frac{4 + 4}{2}$ = 4

mode = 4

Answer 5

Class A :	2	4	4	4	5	6	6	10
(in order)	11	13	15	15	16	16	19	
Class B :	2	5	6	6	9	10	11	12
(in order)	14	14	19					

(a) Class A
LQ is 4th item of data which is 4
UQ is 12th item of data which is 15
$\therefore$ IQR = 11

Class B
LQ is 3rd item of data which is 6
UQ is 9th item of data which is 14
$\therefore$ IQR = 8

(b) Class A has marks that are more spread out than those in Class B.

Answer 6

Number of letters	0	1	2	3	4	5
Number of days	6	7	6	4	1	1

Median is $\frac{25 + 1}{2}$ = 13^{th} item of data which is a 1

Answer 7

$$\frac{3 + 2 + 7 + 6 + 2 + x}{6} = 5$$

$$\frac{20 + x}{6} = 5$$

$$20 + x = 30$$

$$x = 10$$

Answer 8

(a) 4

(b) 5 5 8

(c) x 5 7 7 where $x < 5$

Answer 9

(a) 1 5 6

(b) 5 5 7 x where $x > 7$

Answer 10

(a) 80 min 90 min 105 min
130 min 75 min 120 min

(b) Mean $= \frac{600}{6} =$ 100 minutes

(c) 1 hour 40 minutes