Functional Skills: statistics (L2)

Name _____ Date _____

Questions 1 to 3 use the following information.

A group of friends take five separate flights in balloons.
They keep a record of the number of passengers of each of the flights.

The table shows the number of passengers per flight.

Flight number	Number of passengers per flight			
	Aziz	John	Kathy	Paul
1st	9	7	2	6
2nd	8	6	12	8
3rd	9	8	2	13
4th	4	5	2	6
5th	10	14	12	2
Total number of passengers	40	40	30	35

1   The flight with the largest modal number of passengers is

   A   Aziz

   B   John

   C   Kathy

   D   Paul

2   The person with the largest range of passengers is

   A   Aziz

   B   John

   C   Kathy

   D   Paul

3   The difference between the mean number of passengers on Aziz's flights and the mean number of passengers on Paul's flight is

   A   1

   B   2

   C   3

   D   4

4   The table shows the number of vehicle breakdowns a garage attended each month during 2001 and 2002.

Vehicle breakdowns attended		
	Year	
Month	**2001**	**2002**
January	13	15
February	12	12
March	8	10
April	9	6
May	5	8
June	4	6
July	6	7
August	6	8
September	7	9
October	6	8
November	10	7
December	10	12

The difference between the mean number of breakdowns attended in 2001 and 2002 is

A   0

B   1

C   2

D   12

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Questions 5 to 7 are about a child care association.

5   The association runs a telephone helpline for its members.
During a 40 minute period the helpline answers 25 calls.

On average how long does each call last?

A   16 seconds

B   37.5 seconds

C   96 seconds

D   160 seconds

The association carries out a survey on the number of people who contact the helpline during two weekdays.

Here are the results.

Number of contacting the Helpline during two days											
Time	0800 to 0900	0900 to 1000	1000 to 1200	1100 to 1300	1200 to 1400	1300 to 1400	1400 to 1500	1500 to 1600	1600 to 1700	1700 to 1800	1800 to 1900	1900 to 2000
Day 1	18	21	15	18	8	4	22	20	29	19	15	15
Day 2	11	14	22	21	24	7	12	24	21	24	18	12

6   What is the mean number of members contacting the helpline per hour on Day 1?

A   15

B   17

C   18

D   25

7   What is the difference between the ranges of the number of members contacting the helpline per hour on the two days?

A   2

B   5

C   8

D   9

Questions 8 to 10 are about the colour of paint.

A research chemist carries out tests on the colour of paint from a colour mixing machine.
For each test ten batches of paint mixes are made.
The numbers of identical colour mixes are recorded from votes by an inspection panel of people.

Results on Colour Mixing Machine										
Colour Mix	Number of votes by panel on accurate colour mix for each batch									
	A	B	C	D	E	F	G	H	I	J
Prussian Purple	7	8	6	1	2	1	1	8	6	10
Lily Pink	6	6	7	5	7	7	6	3	6	2
Sunset Gold	3	2	2	1	3	2	3	1	2	1
Lightning Blue	6	9	9	5	5	5	8	8	5	5

8   The chemist calculates the median number of accurate results for each batch of colour mix.
What is the difference between the medians of Prussian Purple and Lightning Blue?

A   0.5

B   3

C   3.5

D   4

9   What is the modal number of votes for Prussian Purple?

A   1

B   3

C   5

D   6

10   The research chemist wants to publish the test results to show which colour mix produces the most consistent results.

One way to do this is use

A   the range of votes for each colour mix

B   the mean number of votes for each colour mix

C   the median number of votes for each colour mix

D   the modal number of votes for each colour mix

Questions 11 and 12 use the following information.

A games company tests four different versions of a new game.

They ask 10 people to give each version a mark out of 10.

This table shows the mark each person gave to the different versions.

Marks given by 10 people for different versions

of the game

Game version	Marks given									
Version a	5	5	1	4	6	6	9	5	5	9
Version b	7	8	7	7	6	10	8	4	7	6
Version c	7	5	8	3	9	3	6	3	4	2
Version d	3	7	8	5	4	6	5	8	8	6

11 Which version of the game has the greatest range of marks?

A Version A

B Version B

C Version C

D Version D

12 The designer compared the modal marks given for each version of the game.

Which version has the greatest modal mark?

A Version A

B Version B

C Version C

D Version D

Questions 13 and 14 refer to the following information

Some volunteers go on a sponsored walk to raise money for charity.
One of the them records how long it takes her friends to finish the walk.
The table shows the times in hours and minutes.

Times for men (hours : minutes)									
2:55	2:35	3:10	2:50	3:20	3:05	2:55	3:20	2:40	3:20

Times for women (hours : minutes)									
3:20	3:10	3:15	2:50	3:00	3:10	3:10	3:30	2:50	3:30

13   What is the range of times for men?

   A   25 minutes

   B   45 minutes

   C   155 minutes

   D   200 minutes

14   What is the median time for women?

   A   185 minutes

   B   190 minutes

   C   190.5 minutes

   D   225 minutes

Questions 15 and 16 use the following information.

The manager keeps a record of the number of visitors. The table shows the number of visitors each day for the first 10 days of the high season.

Number of visitors each day (High season)	
Day	**Number of visitors**
1	37
2	33
3	110
4	46
5	24
6	60
7	72
8	58
9	46
10	104

15   The mean number of visitors for the previous 10 days was 32.

What is the increase in the mean number of visitors per day for the first 10 days of the high season?

A   10

B   14

C   20

D   27

16   What is the range of the number of visitors per day for the first 10 days of the high season?

A   46

B   67

C   86

D   110

Questions 17 and 18 use the following information.

The company buys a new machine to reduce costs. The table shows the cost of making each game for 10 weeks after the new machine arrived.

Cost in pence for each game with new machine	91	82	82	85	88	88	83	82	83	76

17   The mean weekly cost before the machine arrived was 90 pence.

How much lower was the mean weekly cost **after** the machine arrived?

A   2p

B   6p

C   7p

D   8p

18   The manager wants to know how much the cost of making a game varies over 10 weeks.

Which measure should he use?

A   the range

B   the mean

C   the median

D   the mode

Questions 19 and 20 use the following information.

Nurses record the weights of all babies born at the hospital.

The table shows the data for the first 10 boys and 10 girls born in one week.

Weight in kilograms	
Boys	Girls
2.9	2.7
3.7	3.4
4.3	4.1
2.7	3.2
3.9	3.6
3.3	3.8
3.1	2.6
3.6	2.8
4.0	3.8
4.2	4.0

19   What is the range of weights of **all** the babies listed in the table?

   A   1.1kg

   B   1.3kg

   C   1.7kg

   D   2.6kg

20   What is the median weight of the girls recorded in the table?

   A   3.4 kg

   B   3.5kg

   C   3.7kg

   D   3.8kg