المراجعـــة النهائيـــة
لليلة الاختبار

لإختبار الدوري الأول STAT 110

وتشمل الأفكار الأساسية

وإن شاء الله تكون عونا لك بعد الله
في تجميع افكار المنهج ،،،

كل التمنيات الطيبة للجميع بالتوفيق ،،،،

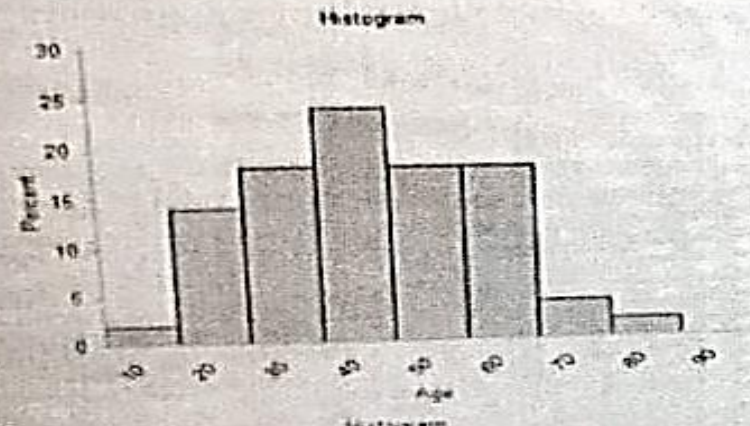
السعـــدي 2018

1

Which of the following graph represent the following data set?

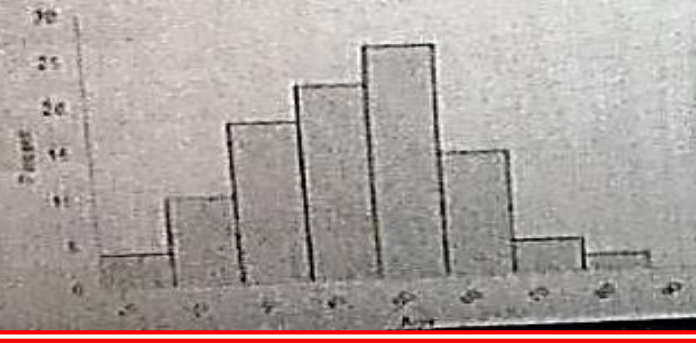
20	51	59	28	57	37	65	58	61	51
62	70	79	49	16	50	53	47	58	65
42	45	55	41	51	20	33	30	37	39
55	64	39	35	34	43	46	57	45	18
48	67	67	38	26	86	47	48	56	25

A



Excel

B



2

s.kau.edu.sa/webapps/assessment/take/take.jsp?course_assessment_id=_163162_1&course_id=_251090_1&content_id=_3522414_1&question_num=5&x=08

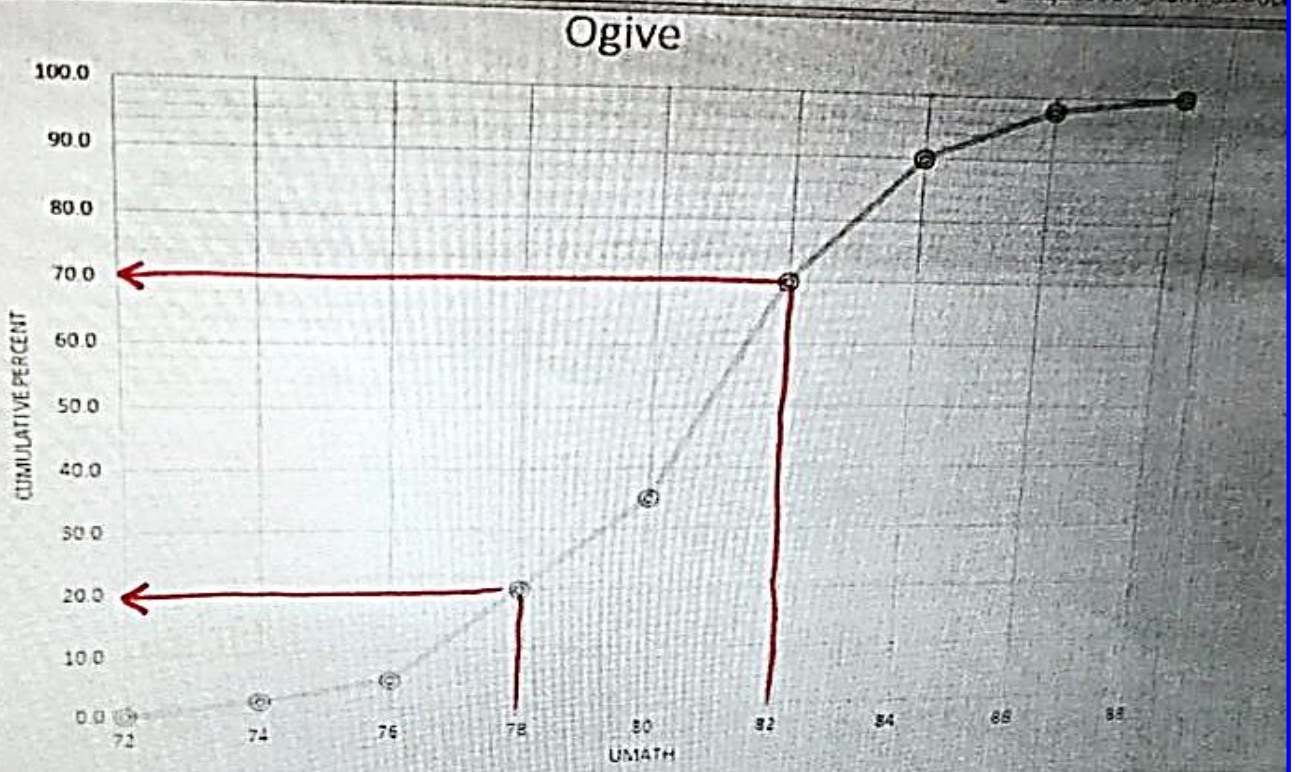
$\frac{f}{\Sigma f} \times 100 = 50$ ← طرح القراءتين 70-20

$\frac{f}{200} \times 100 = 50$

بالذل

$f = \frac{50 \times 200}{100}$

$= 100$



Reference: Ogive

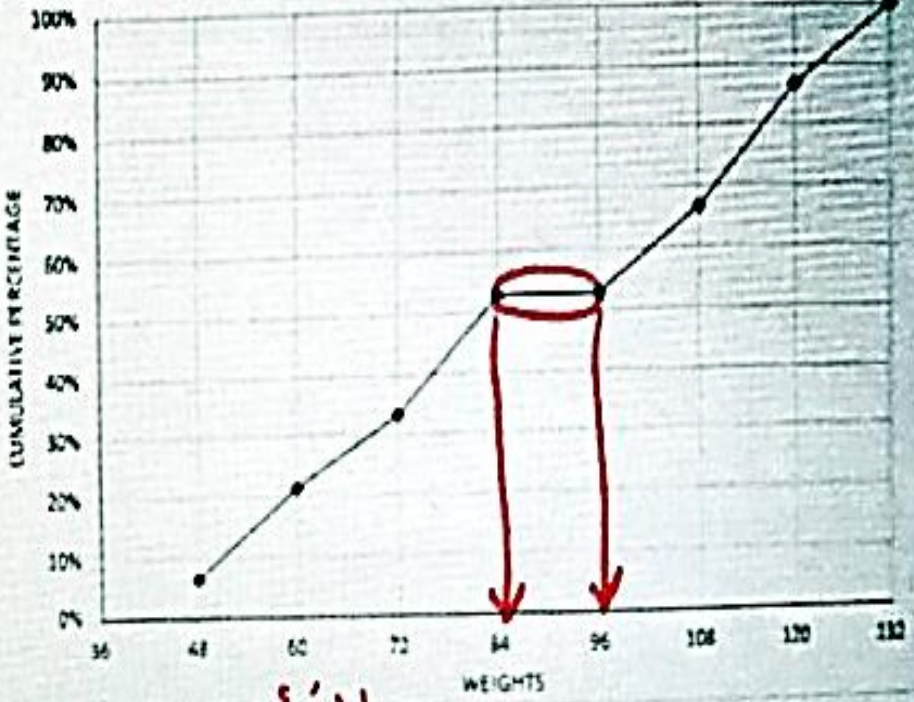
If the sample size is 200, then the number of students who scored between 78 and 82 _____

A. is 125 student
B. is 25 student
C. is 100 student
D. cannot be determined.

ALSAADI

3

The following graph represents the cumulative percent for the weights of a sample of 35 patients



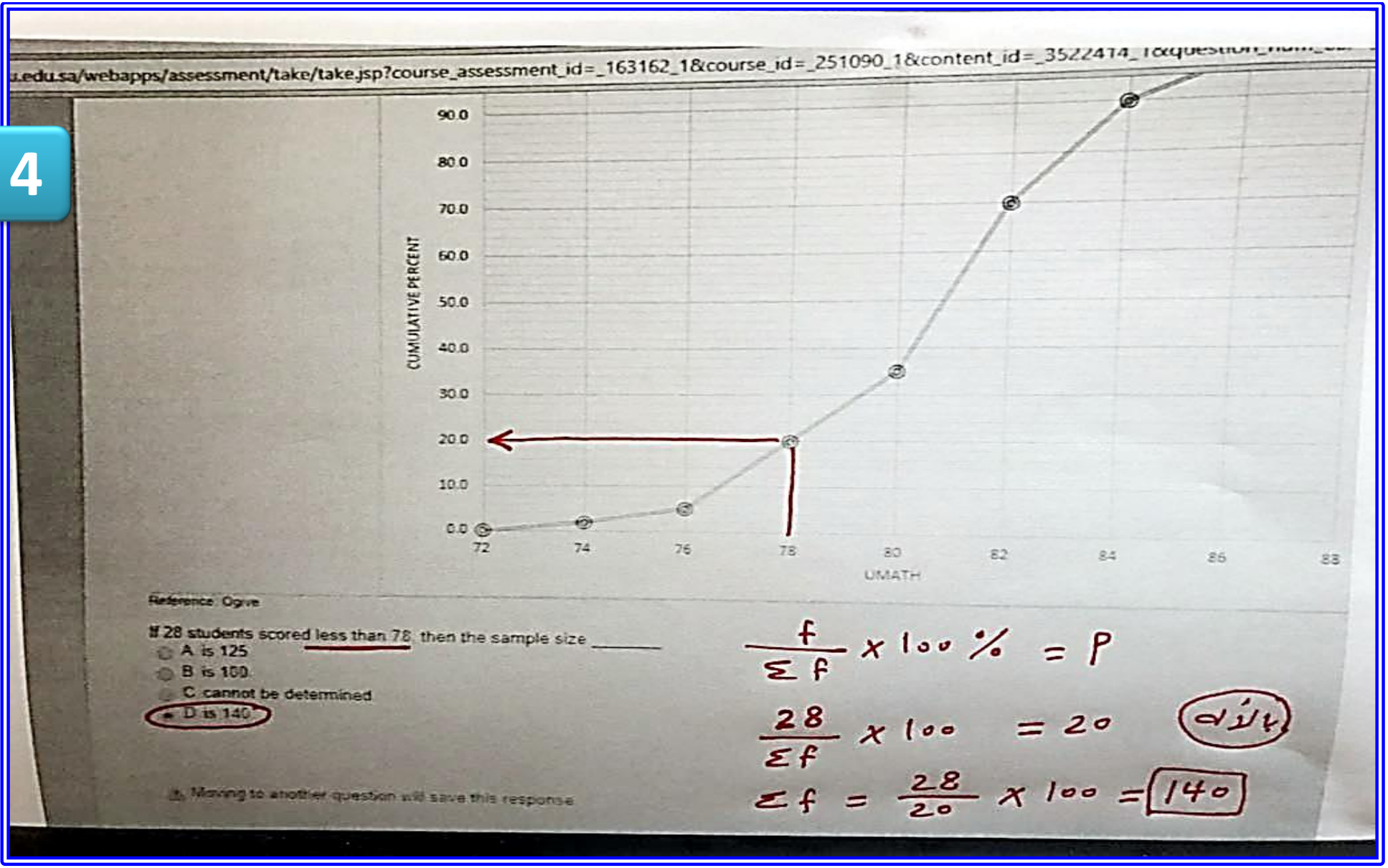
Reference: P_OGIVE

The class limit that has the smallest frequency is _____

- A. 48 < 60
- B. 36 < 48
- C. 84 < 96
- D. 120 < 132

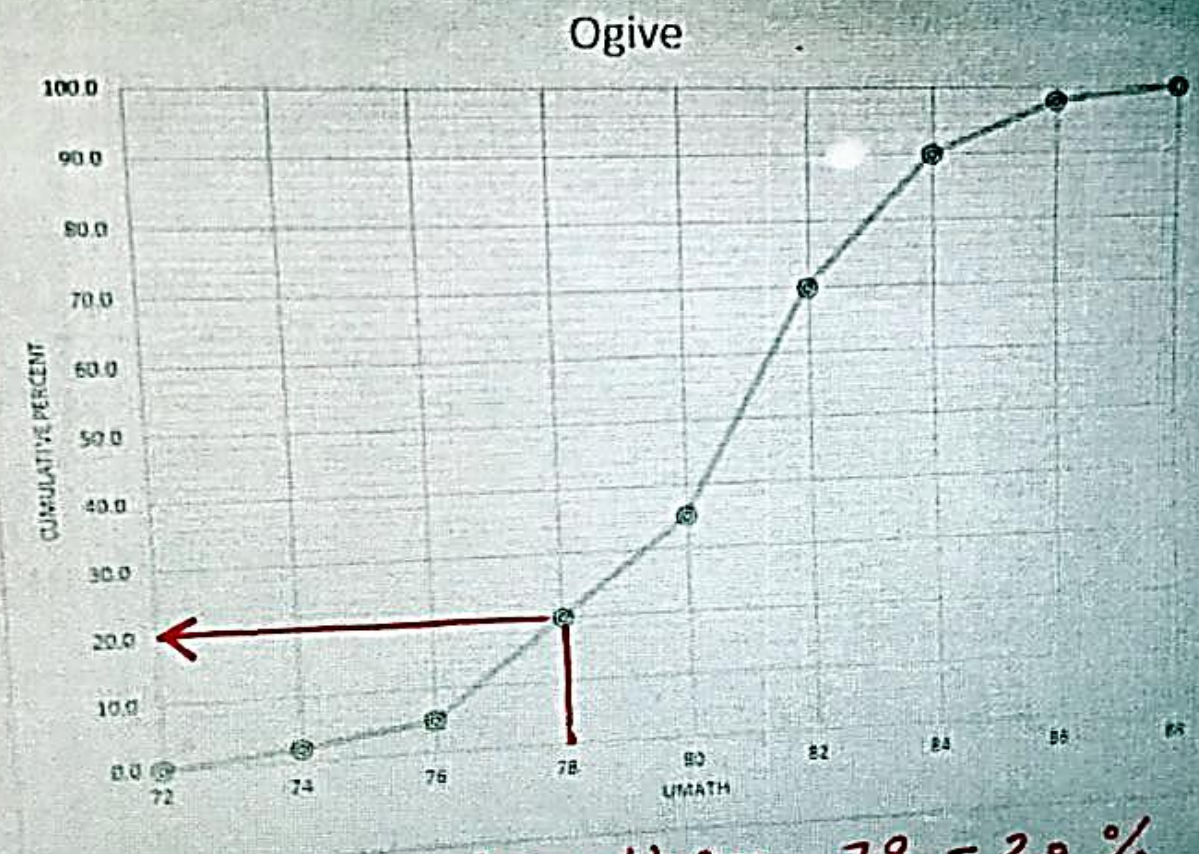
الفئه المناظره
لأقصر قطعه مستقيمه في الطول

4


.edu.sa/webapps/assessment/take/take.jsp?course_assessment_id=_163162_1&course_id=_251090_1&content_id=_3522414_1&question_num=
CUMULATIVE PERCENT
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
72
74
76
78
80
82
84
86
88
UMATH
Reference: Ogive
If 28 students scored less than 78, then the sample size _____
A is 125
B is 100
C cannot be determined
D is 140
Moving to another question will save this response
f / Σf x 100 % = P
28 / Σf x 100 = 20
بالزاد
Σf = 28/20 x 100 = 140

5

The ogive below represents the scores of a random sample of undergraduate students registered in a specific university mathematics course.



less than 78 = 20 %
more than 78 = 80 %

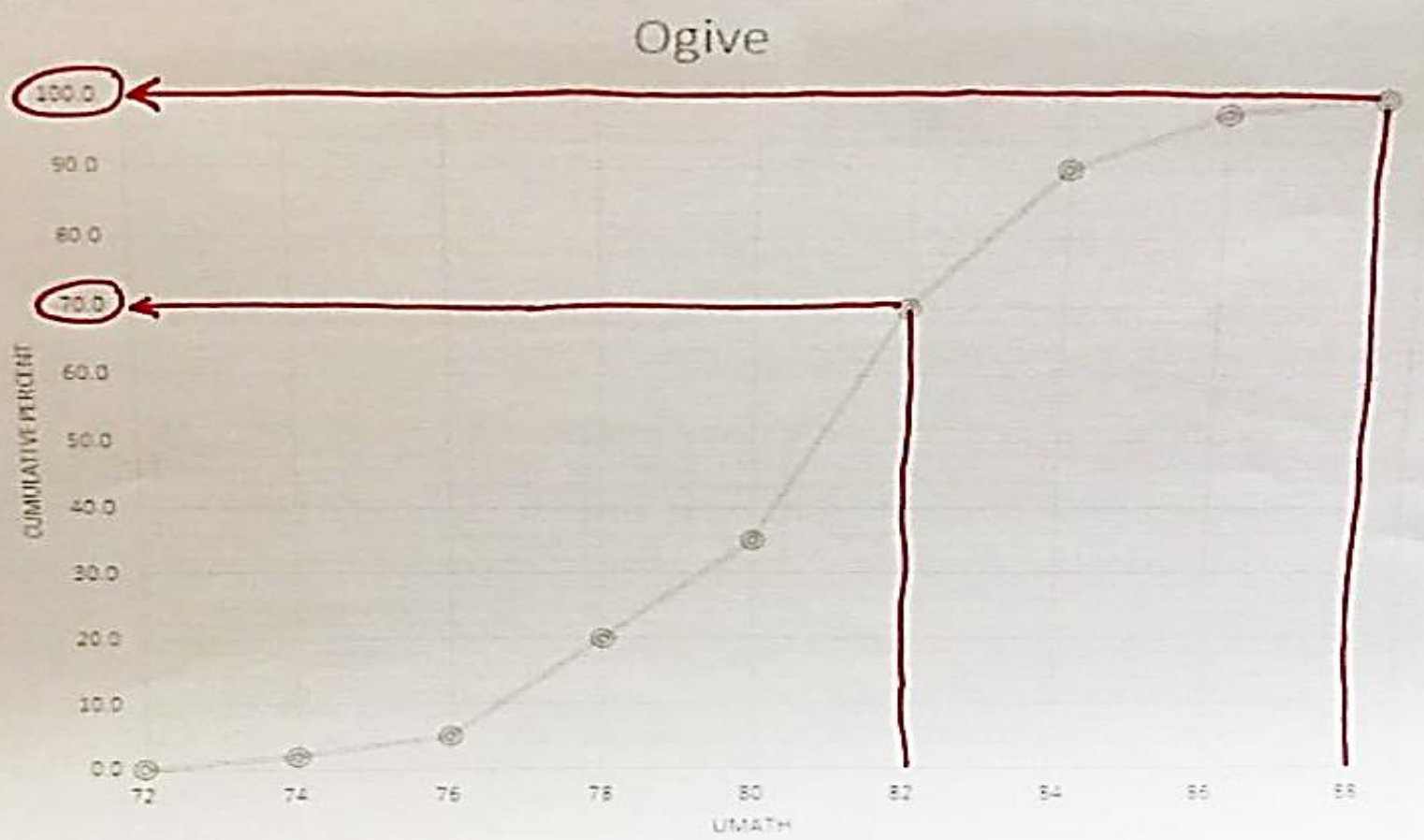
Reference: Ogive

The percentage of students who scored more than 78

A. cannot be determined
B. is 5%
C. is 80%
D. is 20%

6

The ogive below represents the scores of a random sample of undergraduate students registered in a specific university mathematics course



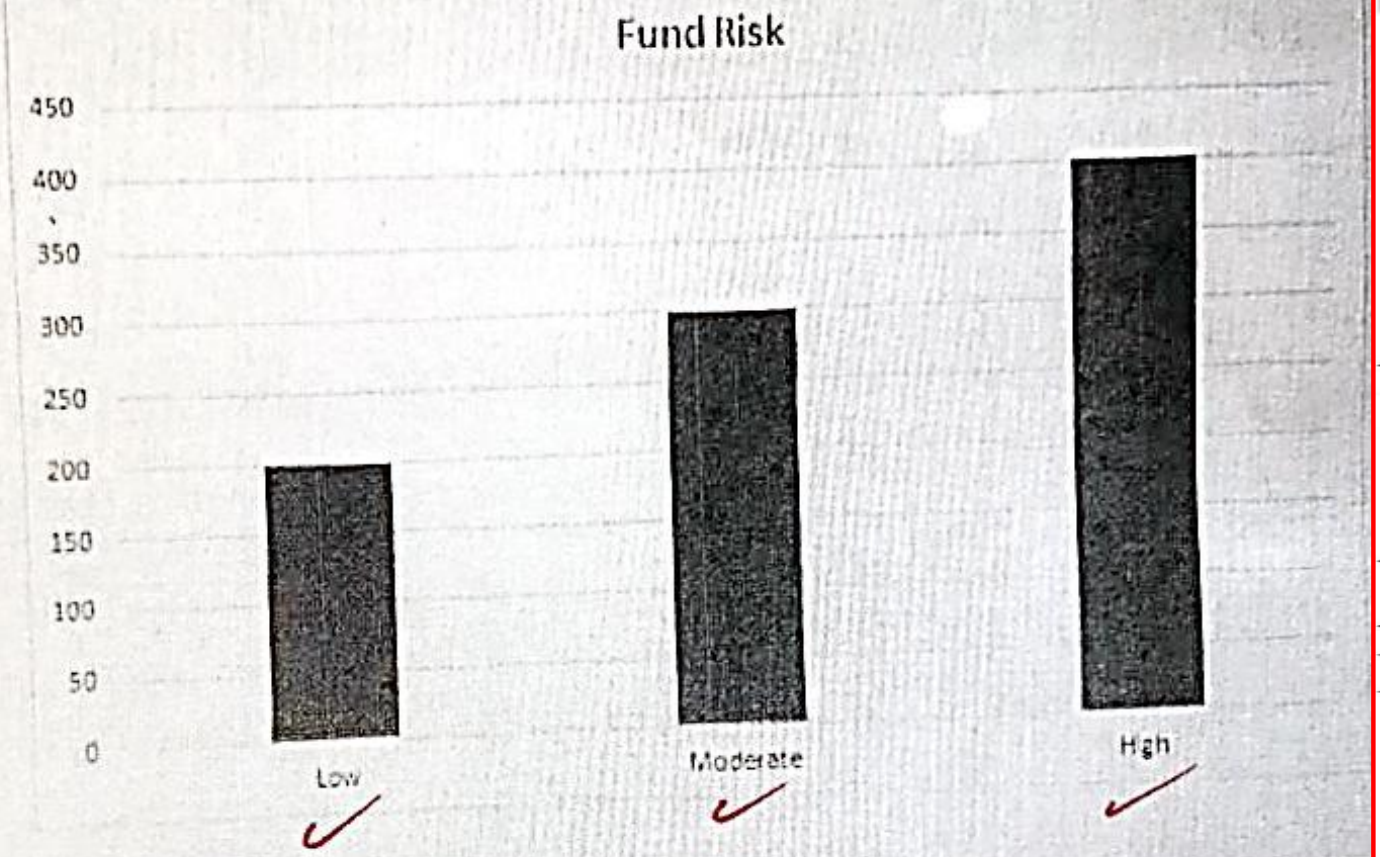
Reference: Ogive

The percentage of students who scored more than 82 _____ $= 100 - 70 = 30\%$

- A. is 30%
- B. is 10%
- C. is 70%
- D. cannot be determined.

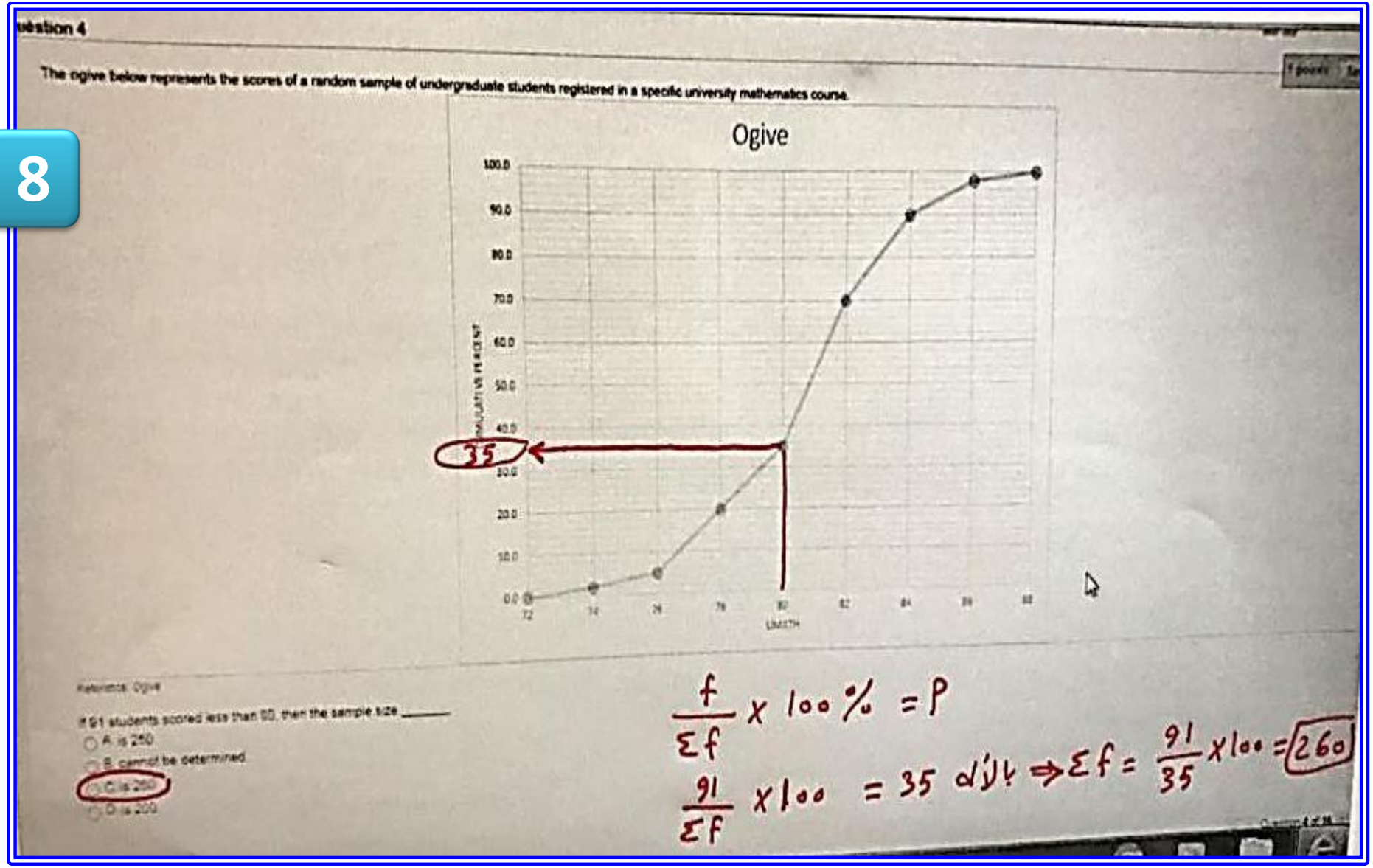
7

The number of classes in the graph below _____.

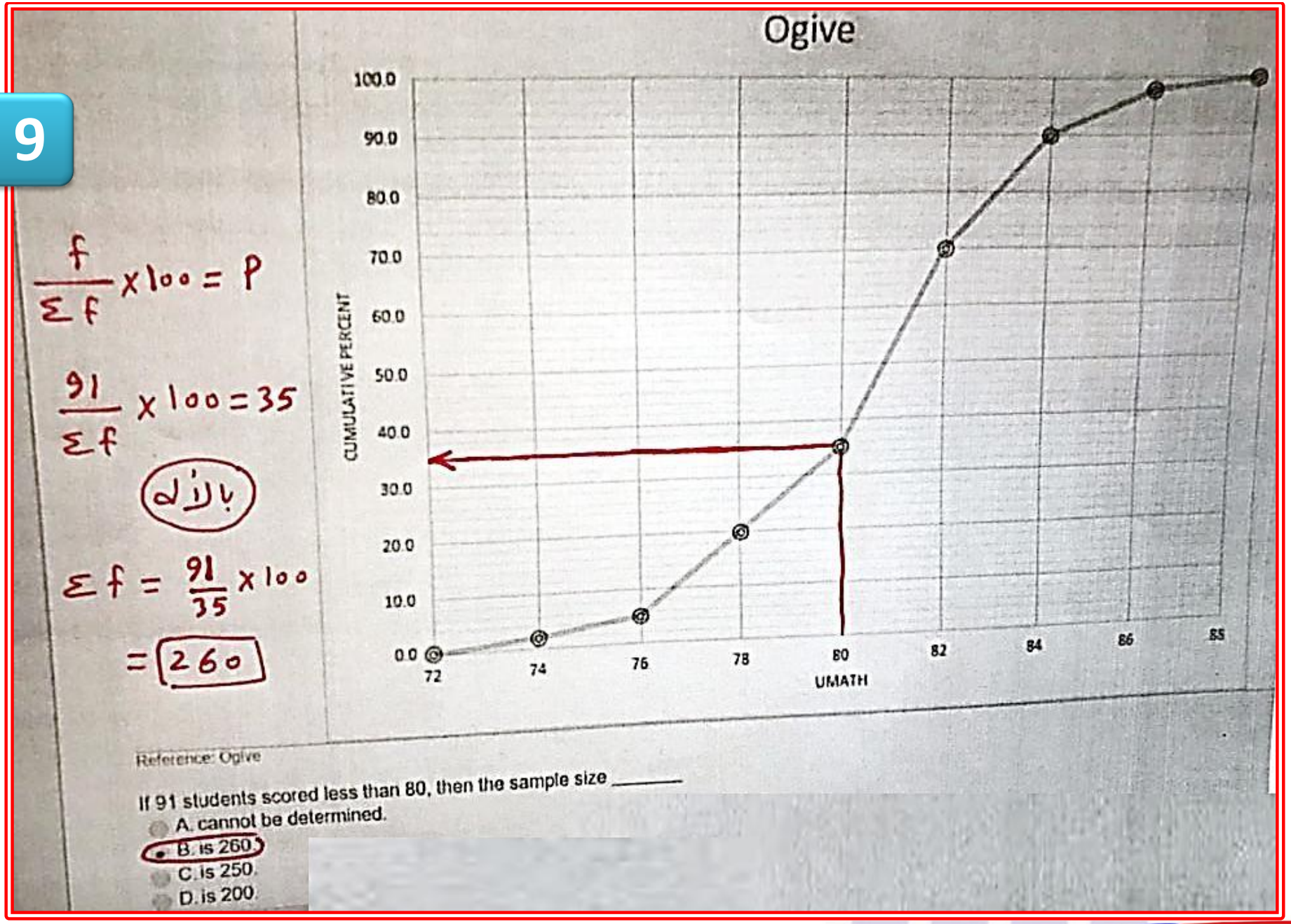


A cannot be determined.
B is 350
C is 4
D is 3

8


uestion 4
The ogive below represents the scores of a random sample of undergraduate students registered in a specific university mathematics course.
Ogive
100.0
90.0
80.0
70.0
60.0
50.0
40.0
35
30.0
20.0
10.0
0.0
72
74
76
78
80
82
84
86
88
LIMITH
Reference: Ogive
If 91 students scored less than 80, then the sample size _____
A. is 260
B. cannot be determined
C. is 260
D. is 200
$\frac{f}{\Sigma f} \times 100\% = P$
$\frac{91}{\Sigma f} \times 100 = 35$ بالأول $\Rightarrow \Sigma f = \frac{91}{35} \times 100 = 260$

9



$\frac{f}{\Sigma f} \times 100 = P$

$\frac{91}{\Sigma f} \times 100 = 35$

بالزلم

$\Sigma f = \frac{91}{35} \times 100$

$= 260$

Reference: Ogive

If 91 students scored less than 80, then the sample size _____

A. cannot be determined.
B. is 260.
C. is 250.
D. is 200.

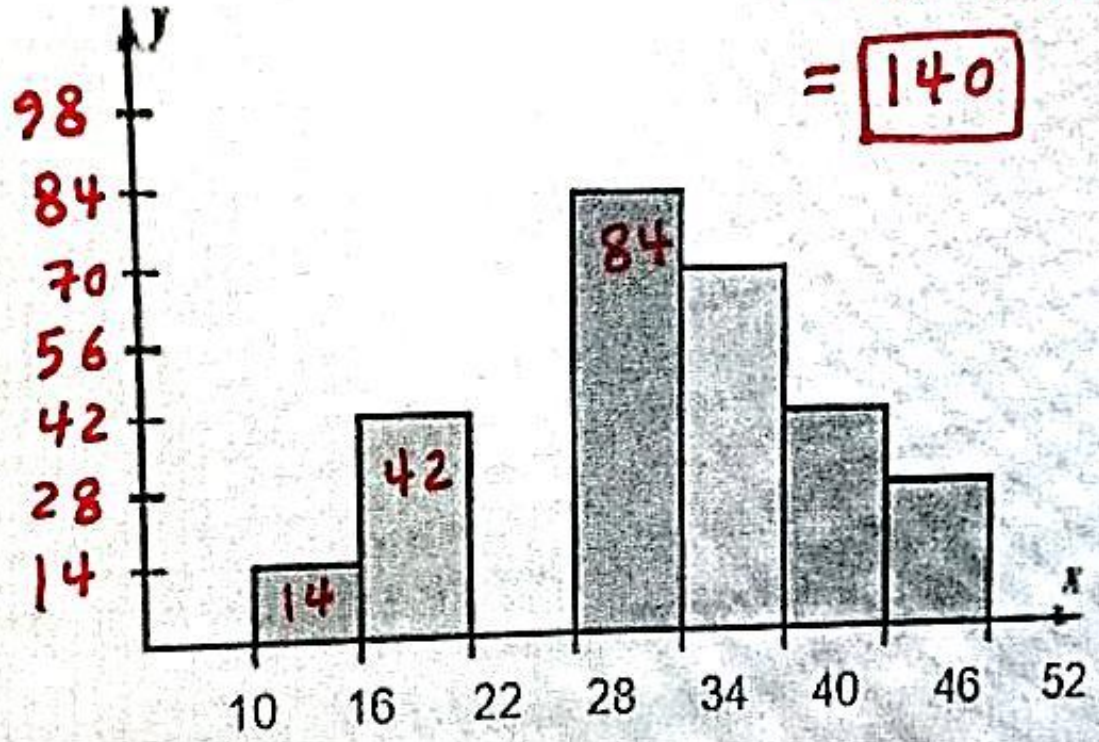
10

In the following graph, the number of observations less than 34 _____

$= 14 + 42 + 84$

$= 140$

98
84
70
56
42
28
14



A is 3

B is 76

C cannot be determined.

D is 140

11

The following table illustrates the number of gallons of water sold by a water filling station for a sample of 31 days:

Number of Gallons	Frequency
13	6
16	3
35	?
36	8
50	8
56	1

The missing frequency (?) is _____

A. 22

B. 5

C. cannot be determined

D. 9

$? = 31 - (6+3+8+8+1)$

$= 5$

12

The data given below shows the cumulative frequency of students' grades in a class

Less than the upper Limit	Cumulative Frequency
Less than 45	6
Less than 50	19
Less than 55	34
Less than 60	50
Less than 65	71

Reference: cumfreq

The sample size _____

A. is 71

B. is 65

C. is 21

D. cannot be determined

sample size

13

The data given below shows the cumulative frequency of students' grades in a class:

Less than the upper Limit	< 42	< 51	< 60	< 69	< 78
Cumulative Frequency	8	22	47	67	88

Reference: cumfreq

What is the class width?

- A. 8
- B. 9
- C. 10
- D. 14

الفرق بين الحدين العلويين لفئتين متتاليتين .

$51 - 42 = \boxed{9}$

14

The data given below shows the cumulative frequency of students' grades in a class:

Less than the upper Limit	< 42	< 51	< 60	< 69	< 78
Cumulative Frequency	8	22	47	67	88
f	8	14	25	20	21

Reference: cumfreq

Find the frequency of the third class.

- A. 25
- B. 77
- C. 20
- D. 47

15

The following stem and leaf plot shows the scores on a recent test of Pre-Calculus students

STEM	LEAF
1	8
2	5
3	0 4 5 8 9
4	1 3 5 8
5	3 3 3 6 7 7 7 7
6	1 4 9
7	8

The lowest score is _____

A 9
B 1
C 8
D 18

16

The table below represents the number of students enrolled in the first midterm exam of some general courses. The table below is an example of a (an) _____ frequency distribution

Course	Number of students
STAT 110	2242
MATH 110	1983
CHEM 110	2025
BIO 110	2222

A. cumulative
B. grouped
C. categorical
D. ungrouped

17

The following output represents the distribution of scores obtained by a group of students registered in a statistics cla

STAT 110

lower		upper	midpoint	width	frequency	percent	cumulative frequency	cumulative percent
45 ← A	<	55	50	10	10	4.901961	10	4.901961
55	<	65	60	10	8	3.921569	18	8.823529
65	<	75	70	10	31	15.196078	49	H
75	<	B	80	10	31	15.196078	80	39.215686
85 ←								
85	<	95	90	10	D	5.392157	G	44.607843
95	<	105	C	10	62	E	153	75
105	<	115	110	10	43	21.078431	196	96.078431
115	<	125	120	10	8	3.921569	204	100
					F	100.0		

Reference Output2

The missing value B in the above table _____

- A. is 10
- B. can't be determined
- C. is 80
- D. is 85

18

The data given below shows the cumulative frequency of students' grades in a class

Less than the upper Limit	< 42	42 < 51	51 < 60	60 < 69	69 < 78
Cumulative Frequency	8	22	47	67	88
f	8	14	25	20	21

Reference: cumfreq

What is the percentage of students who have marks of at least 51?

- A 25%
- B 34.090909%
- C 87.068966%
- D 75%

$$P = \frac{25 + 20 + 21}{88} \times 100\% = 75\%$$

19

The following stem and leaf plot shows the scores on a recent test of Pre-Calculus students.

STEM	LEAF
4	7
5	3 7
6	2 2 4 6 9
7	1 4 6 9
8	0 0 3 6 7 7 7 7
9	3 5 9
10	0

The sample size is _____

- A 24
- B 34
- C 100
- D 10

sample size هو عدد ال leafs

20

The following MegaStat output represents the distribution of scores obtained by a group of students registered in a statistics class:

STAT 110

lower		upper	midpoint	width	frequency	percent	cumulative frequency	cumulative percent
A	<	70	60	20	10	5.405405	10	5.405405
70	<	90	80	20	12	6.486486	22	11.891892
90	<	110	100	20	39	21.081081	61	H
110	<	B	120	20	28	15.135135	89	48.108108
130	<	150	140	20	D	7.027027	G	55.135135
150	<	170	C	20	56	E	158	85.405405
170	<	190	180	20	2	1.081081	160	86.486486
190	<	210	200	20	25	13.513514	185	100
							F	100.0

Reference: Output1

The missing value C in the above table _____

- A can't be determined
- B is 160
- C is 20
- D is 170

* $A = 50$

* $C = 160$

* $H = \frac{61}{185} \times 100\% = 32.97\%$

* $D = 185 - (10+12+39+28+56+2+25)$

$D = 13$

* $G = 89 + 13 = 102$

* $E = \frac{56}{185} \times 100\% = 30.27\ \%$

21

The following table illustrates the number of gallons of water sold by a water filling station:

بيانات منفصله

Number of Gallons	Frequency
14	5
15	2
27	4
40	7
52	8
55	3

The above table is called a (an) _____ frequency distribution

- A. ungrouped
- B. categorical
- C. grouped
- D. cumulative

22

The following table shows the distribution of 94 employees into four project teams. The percentage of employees in team C is approximately

Team	Number of employees
A	10
B	17
C	?
D	39

? = 28

- A. 23.4%
- B. 28%
- C. 28.72%
- D. 29.79%

$? = 94 - (10 + 17 + 39)$

$= 28$

$P = \frac{28}{94} \times 100\% = 29.79\%$

23

In a grouped frequency distribution. the classes must _____

- (•) A. be continuous.
- ( ) B. be measured on an ordinal scale.
- ( ) C. have the same frequency.
- ( ) D. contain a maximum of ten observations.

24

The data given below shows the cumulative frequency of students' grades in a class:

Less than the upper Limit	< 42	< 51	< 60	< 69	< 78
Cumulative Frequency	8	22	47	67	88

Reference: cumfreq

What is the percentage of students who have marks less than 51?

- (•) A. 25%
- ( ) B. 34.090909%
- ( ) C. 9.090909%
- ( ) D. 15.909091%

$$P = \frac{22}{\Sigma f} \times 100\% = \frac{22}{88} \times 100\% = 25\%$$

25

The following represents the distribution of scores obtained by a group of students registered in a statistics class

STAT 110

lower		upper	midpoint	width	frequency	percent	cumulative frequency	cumulative percent
A	<	41	32	18	3	2.631579	3	2.631579
41	<	59	50	18	16	14.035088	19	16.666667
59	<	77	68	18	36	31.578947	55	H
77	<	B	86	18	25	21.929825	80	70.175439
95	<	113	104	18	D	6.140351	G	76.315789
113	<	131	C	18	3	E	90	78.947368
131	<	149	140	18	7	6.140351	97	85.087719
149	<	167	158	18	17	14.912281	114	100
					F	100.0		

Reference Output3

The missing value F in the above table _____.

A. is 107

B. is 114

C. is 100

D. cannot be determined

26

Which of the following represent a frequency distribution?

A

Class Limits	17 < 24	24 < 31	31 < 38	38 < 45	45 < 52	Total
Frequency	1	9	7	7	8	32

B

Class Limits	19 < 24	24 < 29	29 < 35	35 < 40	40 < 45	Total
Frequency	8	3	9	4	5	29

C

Class Limits	5 < 13	13 < 21	21 < 28	28 < 36	36 < 44	Total
Frequency	10	5	4	5	5	29

D

Class Limits	21 < 25	25 < 29	29 < 33	32 < 36	36 < 40	Total
Frequency	1	9	6	4	5	25

العرمه بيهم
جزء الفئه
غير متساوى
لكل فئات الجدول

27

The best graph for displaying data that depends on time is the _____

- A time series graph
- B bar chart
- C histogram
- D pie chart

ALSAADI

28

In a study related to lung cancer, patients are divided into smokers and non-smokers, if 35% of patients in the categorical frequency distribution are non-smokers, then the corresponding degree needed to represent this category in a pie graph is _____

- A 126
- B 9.72
- C 0.35
- D 234

$$\text{degree} = \frac{35}{100} \times 360 = 126$$

29

The data given below shows the cumulative frequency of students' grades in a class

Less than the upper Limit	Cumulative Frequency
Less than 45	6
Less than 50	19
Less than 55	34
Less than 60	50
Less than 65	71

50 < 55

Reference: cumfreq

The lower class limit of the third class is _____

- A 50
- B 34
- C 55
- D 60

30 The data in their original form are called _____

- A. ungrouped frequency distribution.
- B. categorical frequency distribution.
- C. raw data.
- D. grouped frequency distribution.

31 The yearly number of hajis for the last decade can be best displayed using _____

- A. bar chart.
- B. time series chart.
- C. pie chart.
- D. histogram.

اعداد الحجاج سنوياً خلال العقد الأخير.

32 Find the upper class limit for the class $13 < 26$.

- A. 26.5
- B. 26
- C. 13
- D. 12.5

$13 < 26$

upper class limit = 26

lower class limit = 13

33 Marital status of a group of people can be organized into a (an) _____ frequency distribution.

- A. cumulative
- B. grouped
- C. ungrouped
- D. categorical

34 The _____ should be used to show the relationship between the parts and the whole.

- A. polygon.
- B. time-series chart.
- C. pie chart.
- D. bar chart.

ALSAADI

35 Ogive is constructed from line segments connecting the points plotted at _____

- A. the class midpoints and corresponding cumulative frequencies
- B. the upper class limits and corresponding frequencies
- C. the upper class limits and corresponding cumulative frequencies
- D. the upper class boundaries and corresponding cumulative frequencies

36 The classes of a grouped frequency distribution should _____

- A. have the same frequency.
- B. contain a maximum of eleven observations.
- C. be equal in width.
- D. be measured on a nominal scale or on an ordinal scale.

37

If the percentage of a category of a categorical frequency distribution is 27% and the sample size is 203, then the corresponding frequency of that category ____

- A. is approximately 55
- B. is approximately 5481
- C. cannot be calculated
- D. cannot be determined

Moving to another question will save this response

$$\frac{f}{\Sigma f} \times 100\,\% = P$$

$$\frac{f}{203} \times 100\,\% = 27$$

بالأول

$$f = 54.8 \simeq 55$$

38

In a clinical trial, diabetic patients are divided into two groups; a control group and a placebo group. Patients in the control group are provided with a new medication, while patients in the placebo group are provided with vitamins. After a while, the levels of blood sugar of the patients are examined to determine whether the new treatment had a positive impact on diabetes. The independent variable is (are) _____.

- A. the patients
- B. the level of blood sugar
- C. the study groups
- D. the type of treatment provided.

39

Grade	1 – 5	6 – 10	11 – 15	16 – 20	21 – 25
frequency	3	7	10	8	2

less than at most

more than at least

* Less than 15.5 = 10 + 7 + 3 = 20
(at most 15.5) = 10 + 7 + 3 = 20
على الأكثر

* more than 15.5 = 8 + 2 = 10
(at least 15.5) = 8 + 2 = 10
15.5 على الأقل

* degrees for the second class

$$= \frac{7}{30} \times 360 = \boxed{84^\circ}$$

* Mode = $\boxed{11 - 15}$ الفئه المتأخره لأنها تكرار

* range = 25 − 1 = $\boxed{24}$

** Highest cumulative relative frequency = $\boxed{1}$
** Highest cumulative frequency = $\boxed{\text{Sample size}}$

40

class limits	class boundaries	frequency (f)	Midpoint	percent	cumulative frequency
1-5	space ②	3	3	30	3
6-10	5.5 - 10.5	5	space ③	50	space ⑤
space ①	10.5 - 15.5	2	13	space ④	10

* space ① → 11 - 15
* space ② → 0.5 - 5.5
* space ③ → 8
* space ④ → 20 %
* space ⑤ → 8

41 Fifty patients are nominated for a clinical trial which is conducted to test a new treatment for a specific type of cancer. These candidates represent the _____ of the study.

- A. parameter
- B. statistic
- C. population
- D. sample

42 An instructor selects a sample of students using random numbers during class to ask them some course-related questions. This is an example of _____ sampling.

- A. stratified
- B. systematic
- C. cluster
- D. random

43 Citizenship of Saudi Arabian citizens is an example of a _____

- A. population.
- B. sample.
- C. variable.
- D. constant.

44 A researcher at the General Authority for Meteorology and Environmental Protection of Saudi Arabia seeks to evaluate the midday temperatures of February in Jeddah compared to those of January by measuring the daily midday temperatures of both January and February. This is an example of an _____ study.

- A. ordinal
- B. experimental
- C. observational
- D. nominal

45

Histogram
polygon
ogive
→ Continuous متصلة

Bar graph → Nominal - discrete - Ordinal

Pareto chart → Nominal - Ordinal
(qualitative or categorical)

Time series graph → data collected over period of time

Pie graph → Nominal - ordinal
percentage نسبة مئوية

46 The accumulated grade point averages (GPAs) of students in their first year is an example of a _____ variable.

- A. nominal
- B. qualitative
- C. discrete
- D. quantitative

47 The nationality of an international student studying at a US university is an example of a (an) _____ variable.

- A. ordinal-level
- B. nominal-level
- C. continuous
- D. discrete

48 Pixel resolution is one way to describe resolution of digital cameras. The number of pixels that a digital image has is an example of a (an) _____ variable.

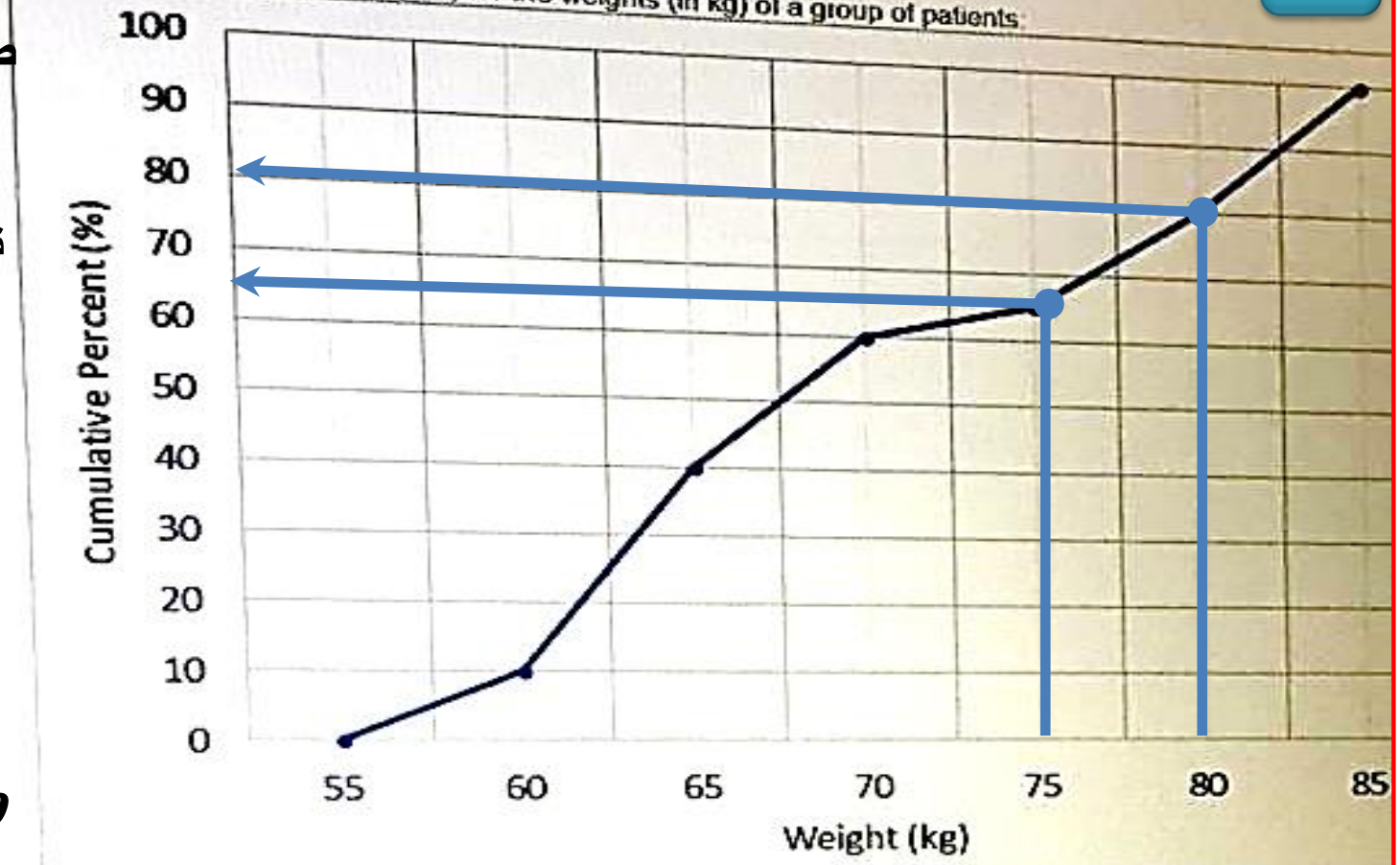
- A. nominal-level
- B. discrete
- C. continuous
- D. ordinal-level

49 The statement "A low-carbohydrate diet may have health benefits that go beyond weight loss." is an example of _____.

- A. population.
- B. descriptive statistics.
- C. inferential statistics.
- D. sample.

50

llowing represents the cumulative relative frequency graph (ogive) for the weights (in kg) of a group of patients



طرح القرائتين 80-65 = 15

Not 15

تعني أن P = المتبقي من 100

تعني أن P = 85

$$\frac{f}{\sum f} \times 100 = P$$

$$\frac{102}{\sum f} \times 100 = 85$$

f

$f = 102 \times 10085 = 120$

erence R_OGIVE

he number of patients with weights that are not between 75 and 80 is 102 patients, then the sample size is about _____

A. 680
B. 15
C. 120
D. 85

ALSAADI

تمارين مهمة جدا

1

A bar chart is used most often when ...

- A. you want to organize data along certain time interval.
- B. you want to display frequencies by category.
- C. you want to show frequencies as compared to total observations.
- D. you want to show frequencies by class intervals.

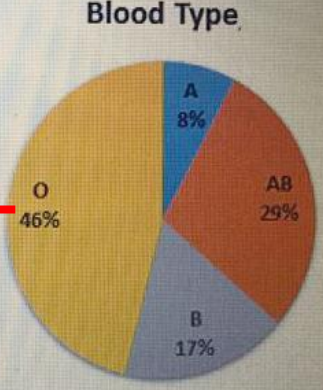
2

In a frequency distribution, the classes must ...

- A. be measured on an ordinal scale.
- B. be exhaustive.
- C. contain a maximum of 10 observations.
- D. have the same frequency.

3

The degree of O blood type in the following graph is approximately ...



$$\text{Degree} = \frac{46}{100} \times 360$$

$$= 165.6$$

- A. 104.4
- B. 28.8
- C. 165.6
- D. 61.2

■ إذا علمت النسبة وطلب الدرجات

اقسم النسبة ÷ 100 واضرب في 360

■ لتحويل الدرجات إلى نسبة مئوية :

اقسم الدرجة على 360 ثم اضرب في 100

مثال : $90^\circ = \frac{90}{360} \times 100 = 25\%$

ALSAADI

0566664790 [رياضيات – إحصاء]

4 The best graph for displaying data that is related to time is ...

- A. bar chart.
- B. histogram.
- C. time series graph.
- D. pie chart.

5 The following table consists of grouping 185 students into four classes. The number of students in class C is approximately ...

Classes	Percentage
A	12%
B	15%
C	?
D	17%

- A. 141
- B. 27
- C. 44
- D. 104

نوجد نسبة C =

$= 100 - 12 - 15 - 17$

$= 56\%$

عدد طلاب C : $\frac{56}{100} \times 185 = 103.6 \approx 104$

6 The data given below shows the cumulative frequency of students' grades in a class:

Less than the upper Limit	Less than 51	Less than 58	Less than 65	Less than 72	Less than 79
Cumulative Frequency	6	17	31	47	72

Reference: cumfreq

The sample size ...

- A. is 173.
- B. is 72.
- C. is 5.
- D. cannot be determined.

Sample size هو أعلى C.f

$= 72$

7 Subjects were randomly assigned to two groups, and one group was given a herb and the other group a placebo. After 6 month, the number of respiratory tract infections each group had were compared. The dependent variable in this study is the ...

- A. number of respiratory tract infections.
- B. 6 months.
- C. two groups of subjects.
- D. type of treatments.

ALSAADI

8 When continuous data are collected in their original form, they are organized in what is called a ...

- A. raw data.
- B. grouped frequency distribution.
- C. categorical frequency distribution.
- D. ungrouped frequency distribution.

9 The following table illustrates the number of gallons of milk sold in a grocery store for a sample of 30 days:

Number of Gallons	Frequency
11	6
20	1
31	?
38	8
53	10
61	2

The missing frequency is ...

- A. 3.
- B. 7.
- C. cannot be determined.
- D. 23.

$$= 30 - (6 + 1 + 8 + 10 + 2)$$
$$= 3$$

10 The values 12, 15, 10, 17, 8, 26, 7, 36 are called ...

- A. grouped frequency distribution.
- B. raw data. بيانات خام لمتنظم في جدول
- C. ungrouped frequency distribution.
- D. categorical frequency distribution.

11 The following table consists of grouping 122 students into four classes. The percentage of students in class C is approximately ...

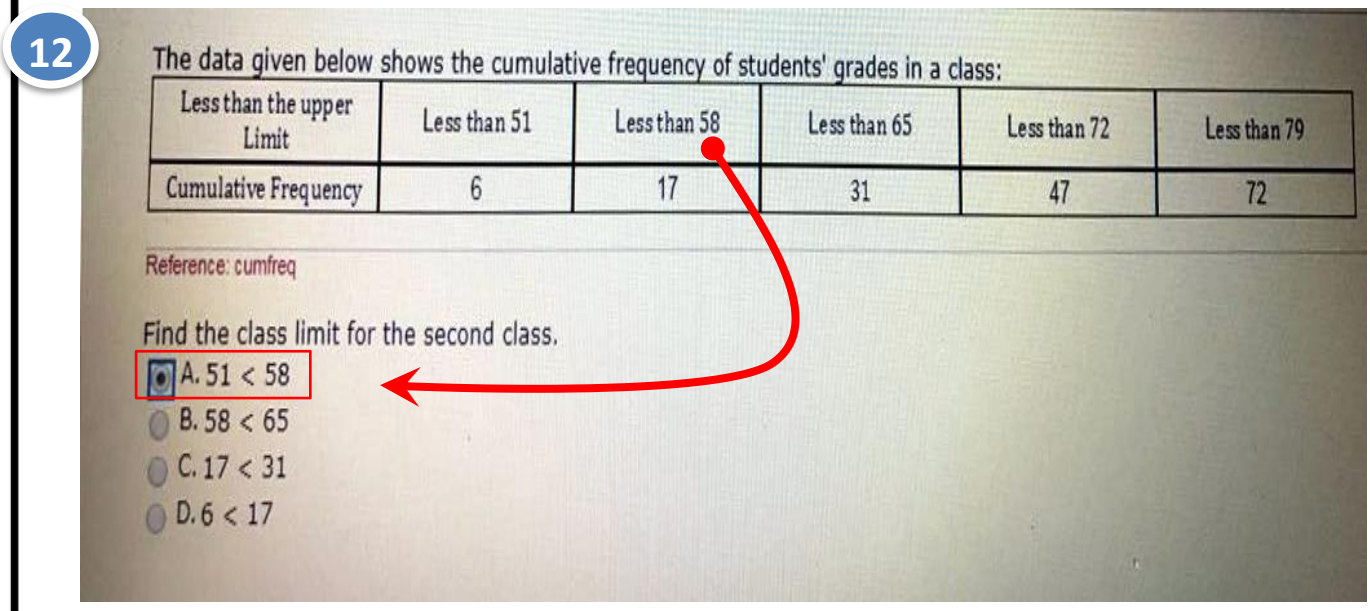
Classes	Frequency
A	14
B	21
C	?
D	51

- A. 36%
- B. 24.59%
- C. 29.51%
- D. 28.69%

Fre P. for C

$$= 122 - (14 + 21 + 51)$$
$$= 36$$
$$P = \frac{f}{3f} \times 100 = \frac{36}{22} \times 100 = 29.508\%$$

ALSAADI



12

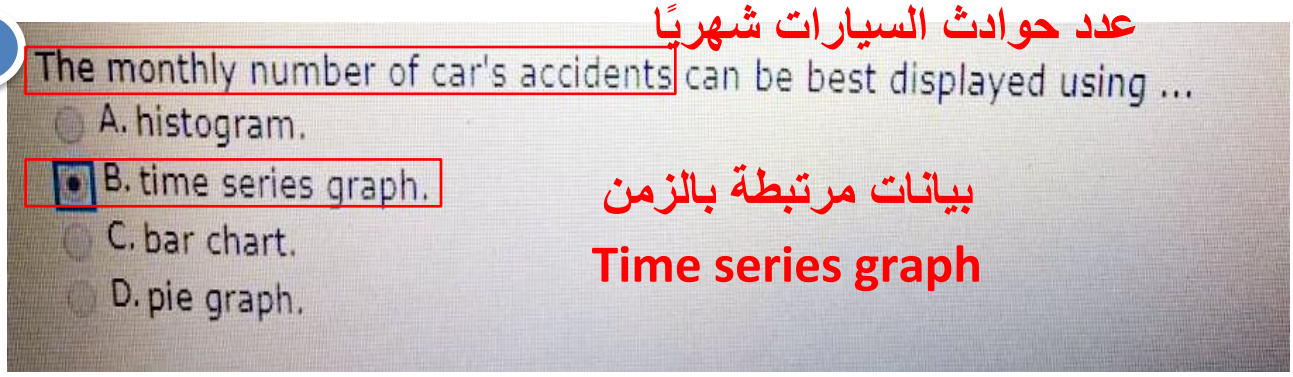
The data given below shows the cumulative frequency of students' grades in a class:

Less than the upper Limit	Less than 51	Less than 58	Less than 65	Less than 72	Less than 79
Cumulative Frequency	6	17	31	47	72

Reference: cumfreq

Find the class limit for the second class.

- A. 51 < 58
- B. 58 < 65
- C. 17 < 31
- D. 6 < 17



13

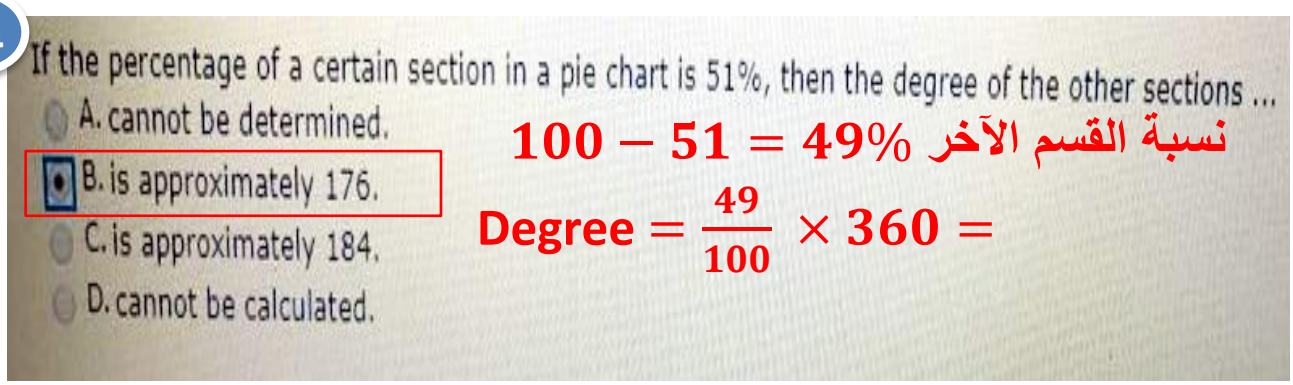
عدد حوادث السيارات شهريًا

The monthly number of car's accidents can be best displayed using ...

- A. histogram.
- B. time series graph.
- C. bar chart.
- D. pie graph.

بيانات مرتبطة بالزمن

Time series graph



14

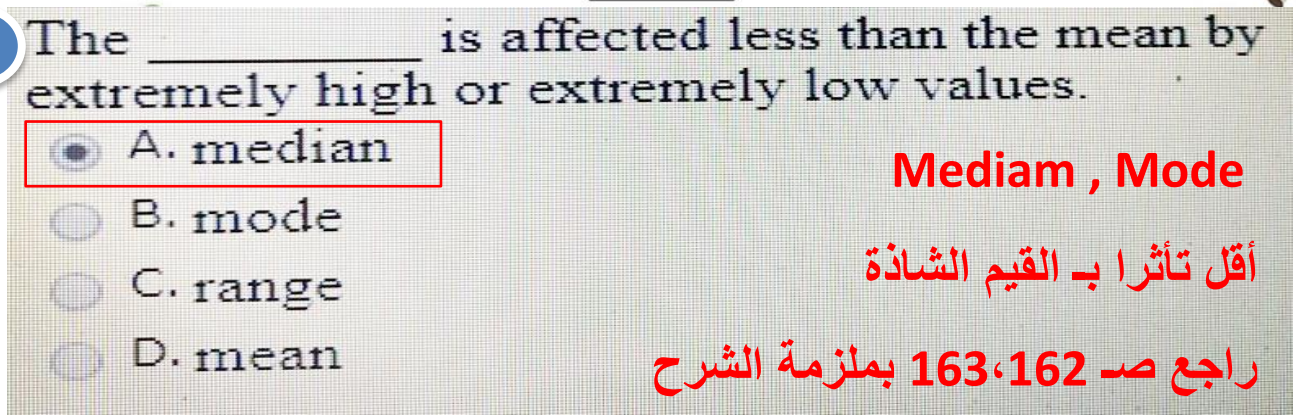
If the percentage of a certain section in a pie chart is 51%, then the degree of the other sections ...

- A. cannot be determined.
- B. is approximately 176.
- C. is approximately 184.
- D. cannot be calculated.

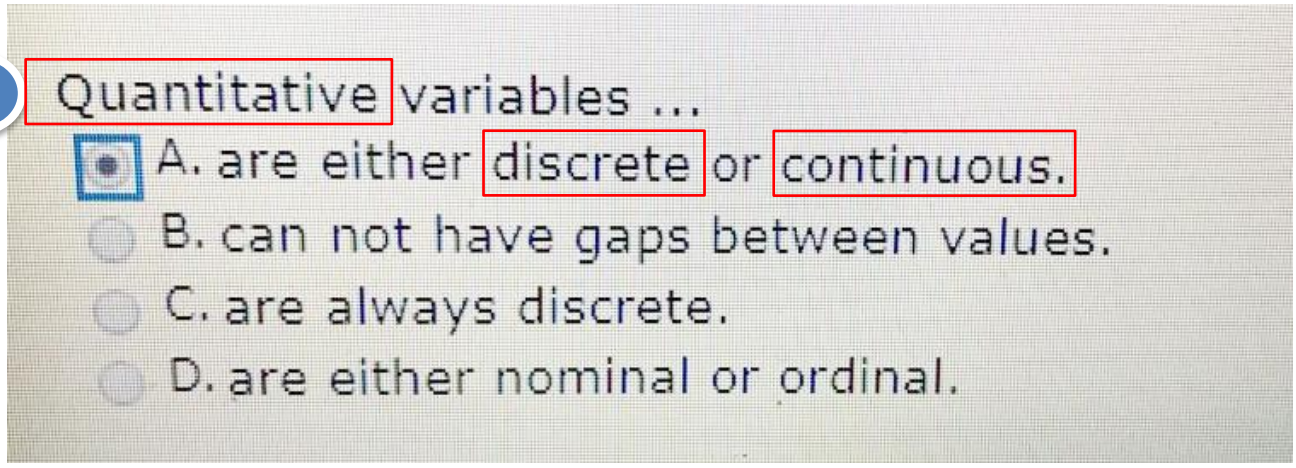
نسبة القسم الآخر $100 - 51 = 49\%$

$$\text{Degree} = \frac{49}{100} \times 360 =$$

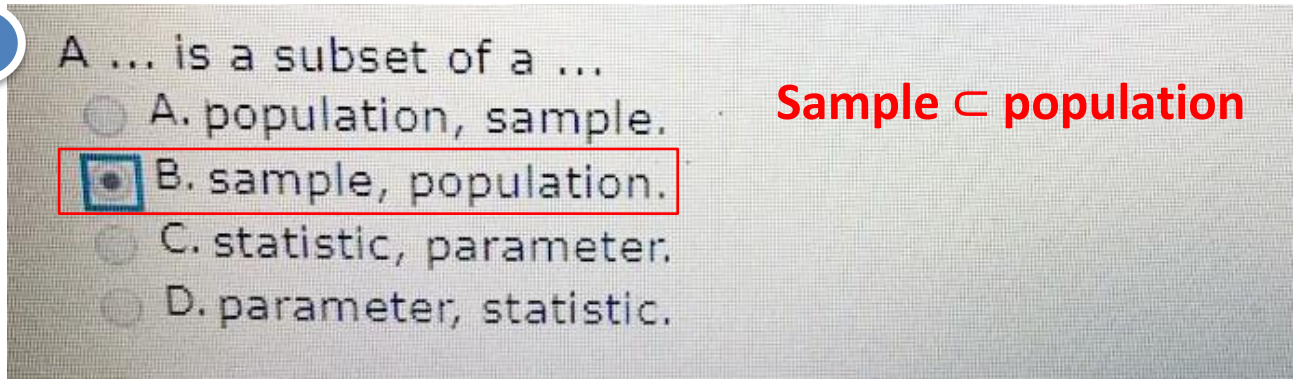
15



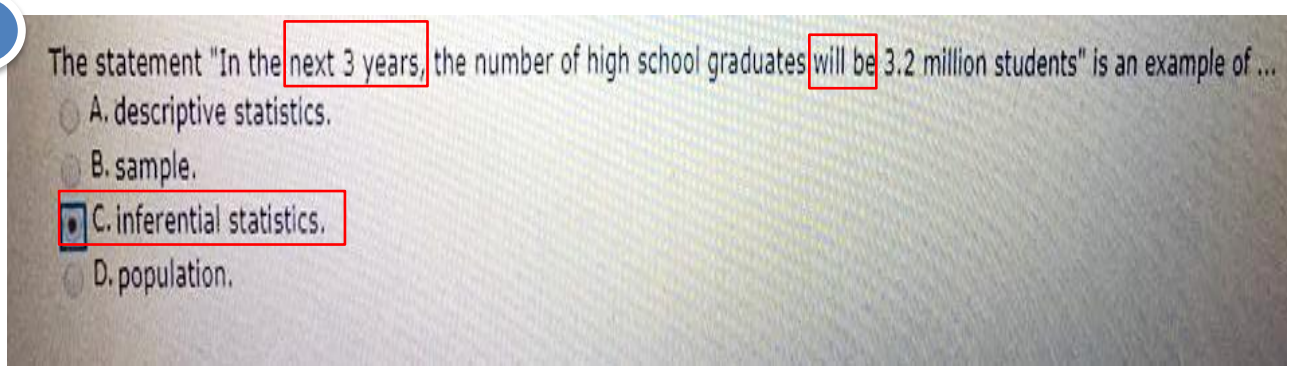
16



17



18



19

Subjects are randomly assigned to four groups. Each group is placed on one of four special diets- a low fat diet, a high fish diet, a combination of low-fat diet and high fish diet, and a regular diet. After 6 months, the blood pressure of the groups are compared to see if diet has any effect on blood pressure. The type of study is ...

- A. nominal.
- B. experimental.
- C. observational.
- D. ordinal.

20

What is the most appropriate measure of central tendency for the following data set?

A , C , A , B , C , B , A , D

- A. range
- B. mean
- C. mode
- D. median

بيانات أسمية(nominal) افضل مقياس لها هو mode

21

Three persons earn 15 SAR an hour, six earn 30 SAR an hour and one earns 36 SAR an hour. The earning average per hour is approximately ...

- A. 27 SAR.
- B. 26.1 SAR.
- C. 87 SAR.
- D. 29 SAR.

$$= \frac{(3 \times 15) + (6 \times 30) + (1 \times 36)}{3 + 6 + 1}$$

22

For a data set, half of the observations are always less than the ...

- A. range.
- B. mean.
- C. mode.
- D. median.

ALSAADI

23

The five-number summary for all students' scores on an exam is 38, 43, 43, 62, 97. Suppose 320 students took the test, what should you conclude about the shape of the scores' distribution?

A. Symmetrical.
B. Skewed to the right.
C. Skewed to the left.
D. Cannot be determined.

لتحديد Skew

قارن بين median , mean

38 , 43 , 43 ,62 , 97

Median = 43

$$\text{Mean} = \frac{\text{جمع القيم}}{\text{عددها}} = 56.6$$

∴ mean من أكبر من Median

Mean > median ⇒Skew to the right

24

The measure of central tendency that is computed using all the values in the data set is called ...

A. the mean.
B. the range.
C. the mode.
D. the median.

عند حساب الـ mean

نستخدم كل القيم لأنها تدخل في جمع

25

If the distribution of the data set is negatively skewed and the value of the mean is 66, then the value of the median ...

A. cannot be determined.
B. should be 66.
C. should be 73.
D. should be 64.

Median > mean

Median > 66

26

A recent survey of a new diet cola reported the following percentages of people who liked the taste. Find the weighted mean of the percentages.

Area	Number Surveyed	% Favored
1	938	36
2	3017	29
3	701	48

A. 1552%
B. 41.2%
C. 33.27%
D. 1371%

27 Check the following data set for outliers:

118 , 123 , 126 , 119 , 149 , 122

A. 118
B. 149
C. No outlier
D. 7

راجع مثال مشابه صـ15 من التست بنك

28 What is a z score?

A. Is a measure of how data values are related.
B. Is a measure of central tendency.
C. Is a measure that tells how many mean a data value is above or below the standard deviation.
D. Is a measure that tells how many standard deviation a data value is above or below the mean.

29 The following table represents the degree for a sample of employees in a company:

Classes	Frequency
Elementary school	22
Secondary school	14
High school	16
Bachelor	26
PhD	10

Reference: Ch2&3

The most appropriate measure of central tendency for this data is the ...

A. mean
B. mode
C. range

بيانات أسمية(nominal) افضل مقياس لها هو mode

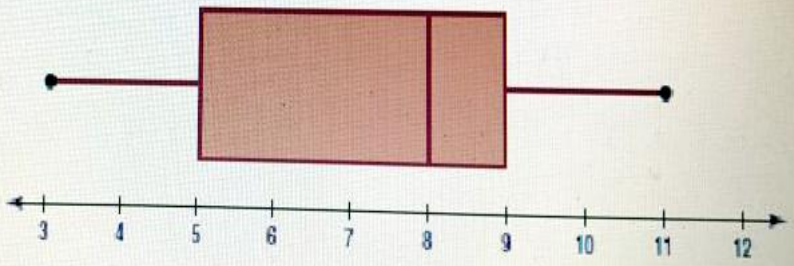
30 What is the relationship between the variance and the standard deviation?

A. The square root of the standard deviation is the variance.
B. The square of the variance is the standard deviation.
C. There is no relationship between the variance and the standard deviation.
D. The square root of the variance is the standard deviation.

$$\sqrt{variance} = standard\ deviation$$

ALSAADI

31 The value of the mean depending on the information obtained from the following boxplot ...



- A. can be any value.
- B. should be greater than 8.
- C. should be equal to 8.
- D. should be less than 8.

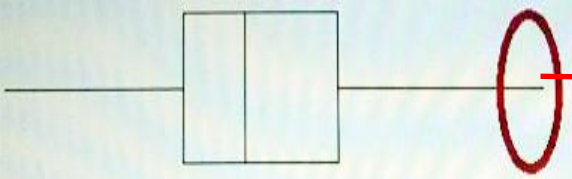
Left Skew

Mean < median < mode

8

∴ mean <8

32



High value

maximum

The circled part of the above box plot represents _____

- A. the 3rd quartile.
- B. the maximum.
- C. the 1st quartile.
- D. the minimum.

33 The following data represents the ages of a group of patients:

60	54	67	51
66	64	61	63
57	58	66	45
54	40	51	61
59	86	66	63

راجع صـ82 تست بنك

The values of ages corresponding to the 15th, 65th, and 80th percentiles are equal to ___, ___, and ___, respectively.

- A. 54, 63, 66
- B. 51, 54, 63
- C. 51, 63, 66
- D. 51, 54, 66

ALSAADI

34 If there is one value for the mode of a data set, then it is called a _____ data set.

- A. multimodal
- B. normal
- C. unimodal
- D. bimodal

35 If mean = median = mode, then the shape of the distribution is _____.

- A. not symmetric
- B. positively skewed
- C. negatively skewed
- D. symmetric

متماثلة

36 The _____ is an example of a statistic.

- A. random sample
- B. population variance
- C. sample mean
- D. population mean

Sample أي مقياس مرتبط بـ

37 Which measures from the following are mostly affected by outliers?

- A. Mean and mode.
- B. Mode and median.
- C. Mode and range.
- D. Mean and range.

median أو mode أي اختيار به
لايمكن أختياره

38 If the degree of a certain section in a pie chart is 176, then the percentage of that section ...

- A. is approximately 18%.
- B. cannot be determined.
- C. cannot be calculated.
- D. is approximately 49%.

تحويل الدرجات إلى نسب مئوية

$$\frac{176}{360} \times 100 = 48.888\%$$

ALSAADI

39 The data given below shows the cumulative frequency of students' grades in a class:

Less than the upper Limit	Less than 51	Less than 58	Less than 65	Less than 72	Less than 79
Cumulative Frequency	6	17	31	47	72

ناقص

Reference: cumfreq

Find the frequency of the third class.

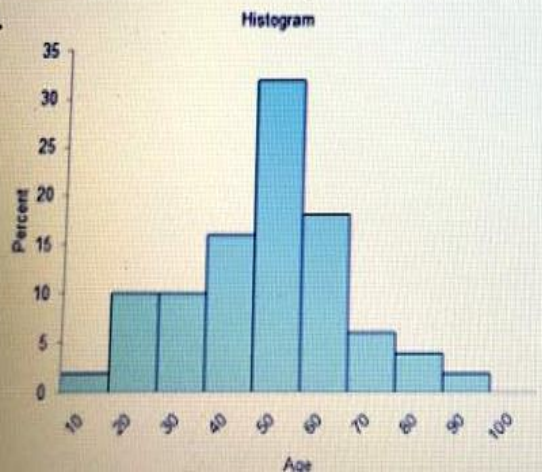
- A. 16
- B. 54
- C. 31
- D. 14

$$41 - 17 = 14$$

40 Which of the following graph represent the following data set?

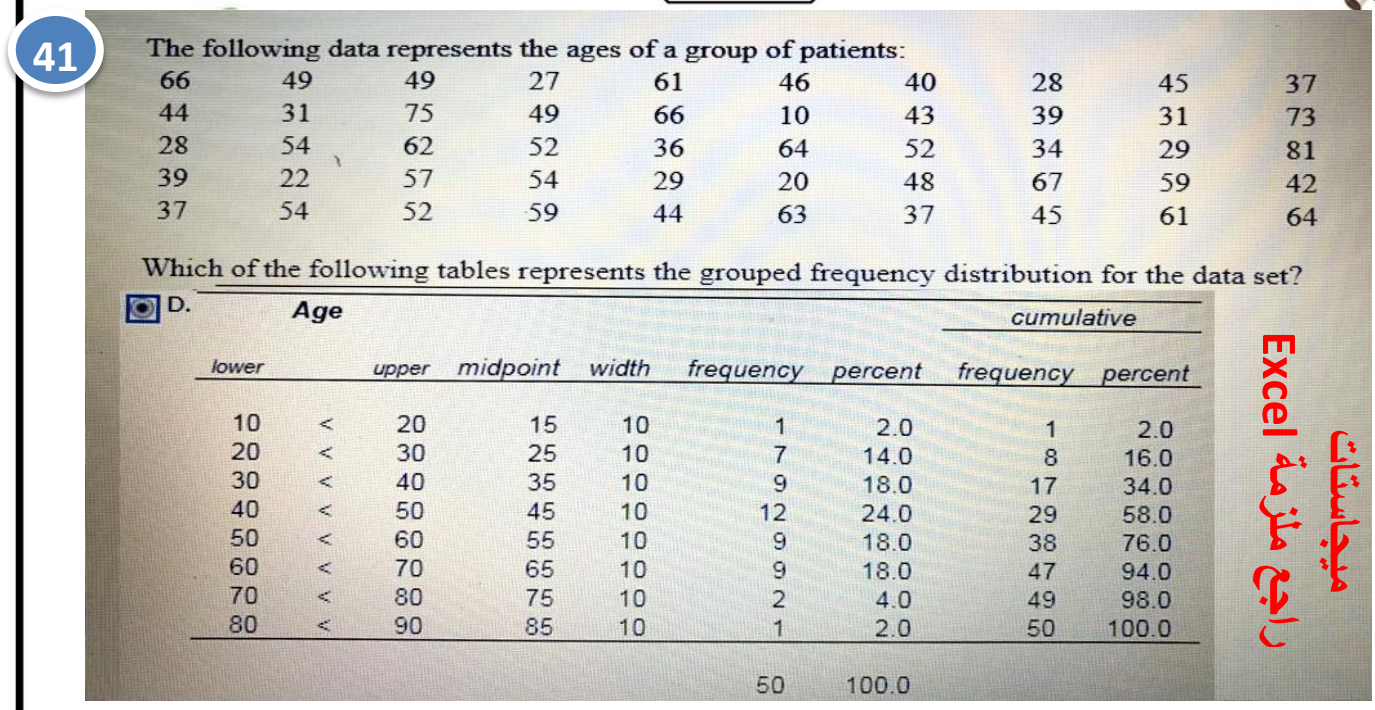
39	26	39	51	29	58	54	36	53	61
65	46	48	48	71	66	62	45	55	56
34	24	59	27	50	53	58	52	39	64
76	63	20	70	49	57	59	48	48	65
60	64	85	59	53	16	90	42	85	55

A.



ميجاستات
راجع ملزمة Excel

ALSAADI



41

The following data represents the ages of a group of patients:

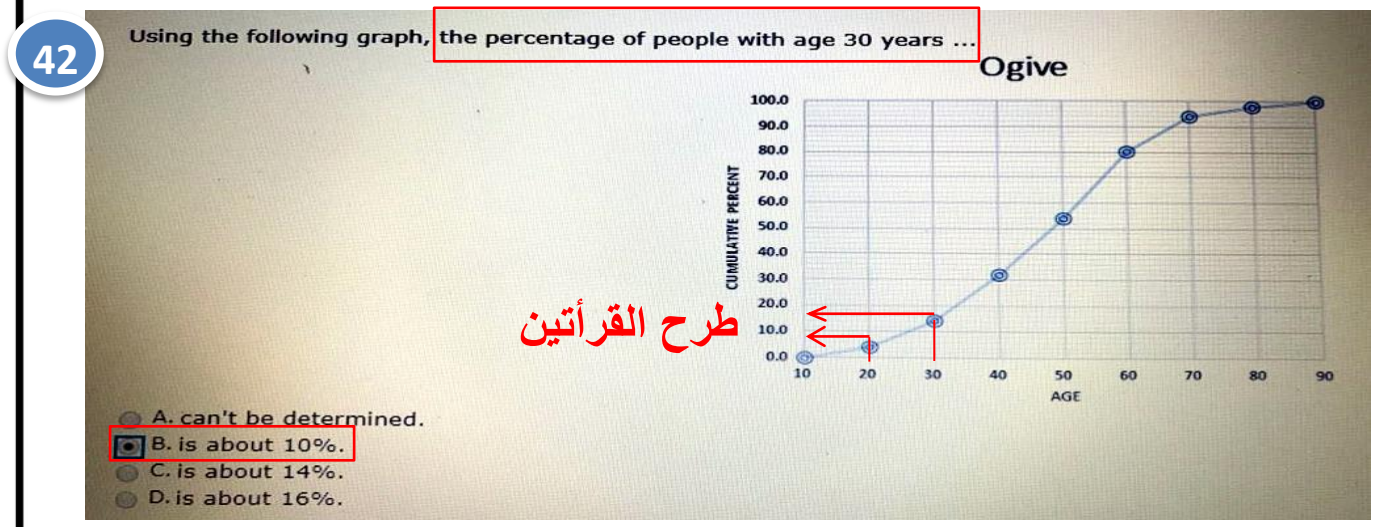
66	49	49	27	61	46	40	28	45	37
44	31	75	49	66	10	43	39	31	73
28	54	62	52	36	64	52	34	29	81
39	22	57	54	29	20	48	67	59	42
37	54	52	59	44	63	37	45	61	64

Which of the following tables represents the grouped frequency distribution for the data set?

D.

Age							cumulative	
lower		upper	midpoint	width	frequency	percent	frequency	percent
10	<	20	15	10	1	2.0	1	2.0
20	<	30	25	10	7	14.0	8	16.0
30	<	40	35	10	9	18.0	17	34.0
40	<	50	45	10	12	24.0	29	58.0
50	<	60	55	10	9	18.0	38	76.0
60	<	70	65	10	9	18.0	47	94.0
70	<	80	75	10	2	4.0	49	98.0
80	<	90	85	10	1	2.0	50	100.0
					50	100.0		

ميجاستات راجع ملزمة Excel

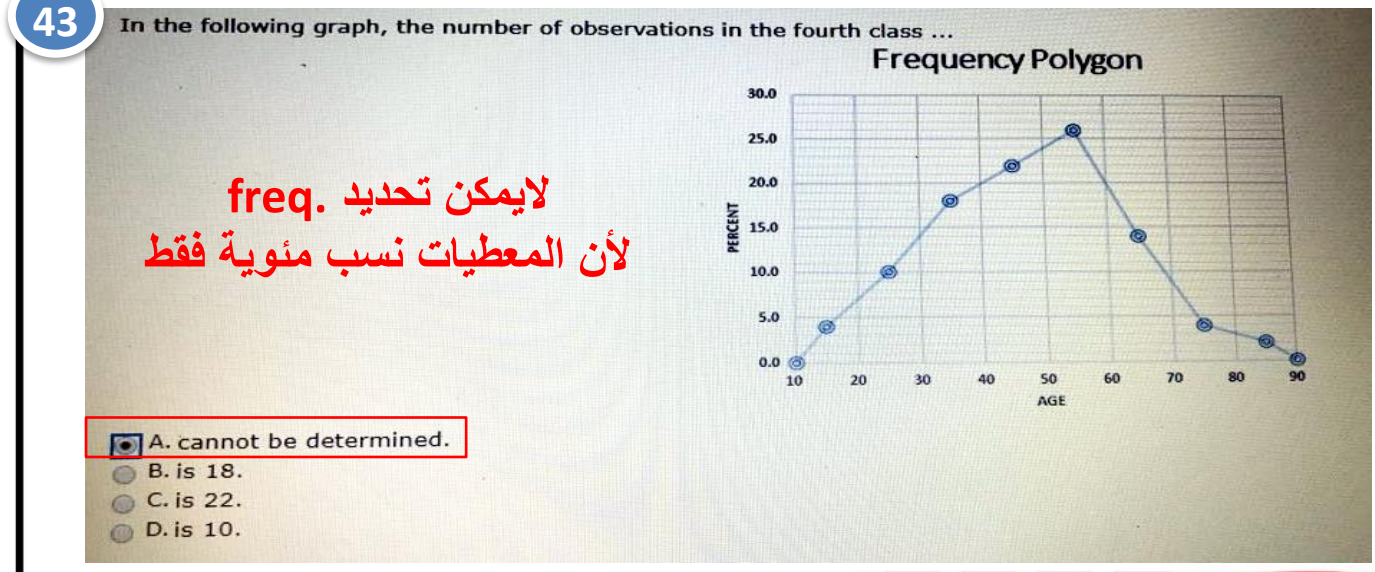


42

Using the following graph, the percentage of people with age 30 years ...

طرح القرأتين

A. can't be determined.
B. is about 10%.
C. is about 14%.
D. is about 16%.

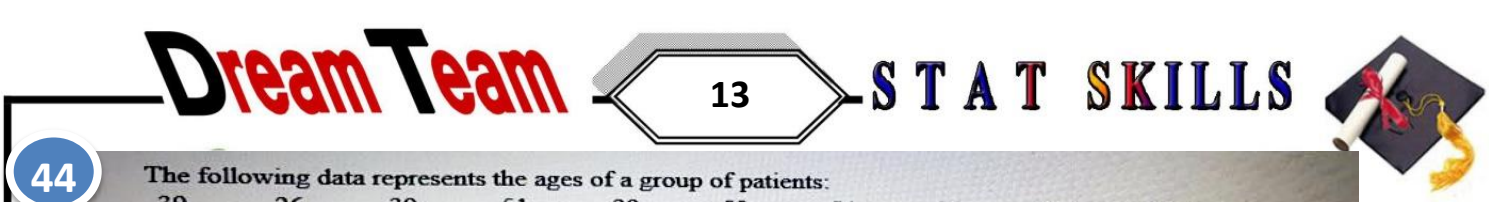


43

In the following graph, the number of observations in the fourth class ...

لايمكن تحديد freq.
لأن المعطيات نسب مئوية فقط

A. cannot be determined.
B. is 18.
C. is 22.
D. is 10.



44

The following data represents the ages of a group of patients:

39	26	39	51	29	58	54	36	53	61
65	46	48	48	71	66	62	45	55	56
34	24	59	27	50	53	58	52	39	64
76	63	20	70	49	57	59	48	48	65
60	64	85	59	53	16	90	42	85	55

The stem and leaf plot that illustrate the data is ...

A.

Stem	Leaf
1	2
2	2 3 6 8
3	1 1 2 6 7 8
4	0 0 1 1 3 4 5 7 7 7 8 8 8 9 9
5	0 0 2 3 4 4 4 4 4 5 9
6	1 1 1 2 2 5 5 7 8
7	2 4
8	2
9	0

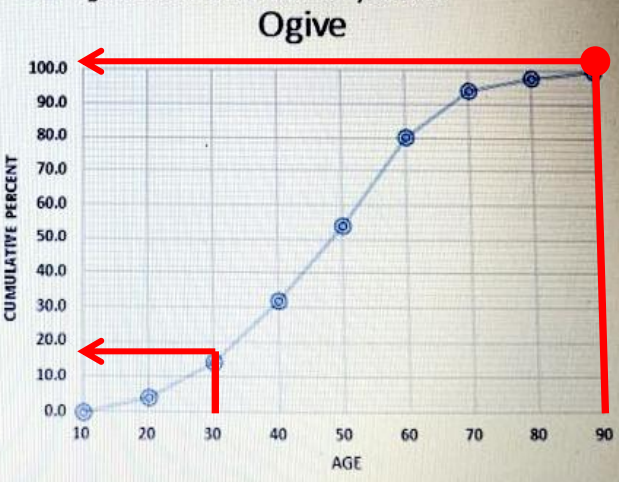
ميجاستات
راجع ملزمة Excel

B.

Stem	Leaf
1	6
2	0 4 6 7 9
3	4 6 9 9 9
4	2 5 6 8 8 8 8 9
5	0 1 2 3 3 3 4 5 5 6 7 8 8 9 9 9
6	0 1 2 3 4 4 5 5 6
7	0 1 6
8	5 5
9	0

45

Using the following graph, the percentage of people with age between 30 and 90 years ...



طرح القرأتين

A. is about 14%.
B. is about 94%.
C. is about 80%.
D. can't be determined.

46

Question 1

Zip Code is an example of ... variable.

Nominal

Question 2

A constant takes ... values only.

Fixed
أو
Same

Question 3

A group of subjects selected from all subjects under study is called ...

Sample

Question 4

In a large school district, all teachers from two buildings are interviewed to determined whether they believe the students have less homework to do now than in previous years. This is an example of ... sample.

Cluster

Question 5

Drawing conclusions about the true population characteristics based on information obtained from the samples is called ...

Inferential statistics

Question 6

Weight of lobsters in a tank in a restaurant is an example of ... variable.

Continuous

Question 7

Number of people at a board of directors is an example of ... variable.

Discrete

Question 8

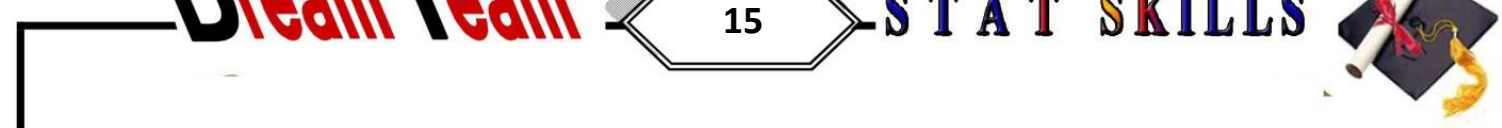
Subjects are randomly assigned to four groups. Each group is placed on one of four special diets- a low fat diet, a high fish diet, a combination of low-fat diet and high fish diet, and a regular diet. After 6 months, the blood pressure of the groups are compared to see if diet has any effect on blood pressure. The independent variable is the ...

Diet type

Question 9

A study that involves no researcher intervention is called ... study.

الباحث لايغير في النتيجة
Observational study



47

The following stem and leaf plot shows the scores on a recent test of Pre-Calculus students.

STEM	LEAF
4	0
5	5 5
6	0 3 6 7 8
7	0 5 7 9
8	0 0 4 5 7 7 7 7
9	0 5 6
10	0

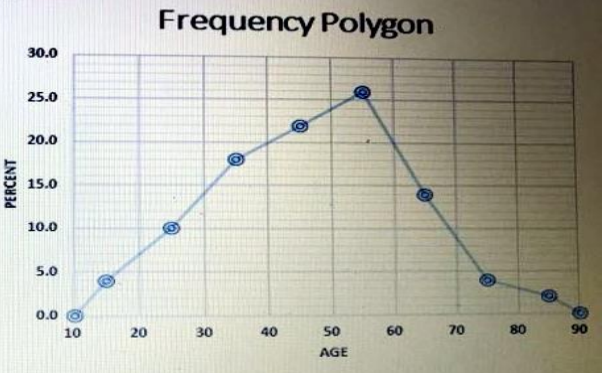
The number of students who scored at least 70 is . .

A. 8
B. 16
C. 11
D. 20

على الأقل 70
عد الـ leafs
من أول 70 لأعلى = 16

48

The sample size used to create the following graph ...



Sample size
حجم العينة لايمكن تحديده
لأن المعطى نسب مئوية فقط

A. is 450.
B. is 90.
C. is 10.
D. cannot be determined.

Properties and Uses of Central Tendency

The Mean

1. The mean is found by using all the values of the data.
2. The mean varies less than the median or mode when samples are taken from the same population and all three measures are computed for these samples.
3. The mean is used in computing other statistics, such as the variance.
4. The mean for the data set is unique and not necessarily one of the data values.
5. The mean cannot be computed for the data in a frequency distribution that has an open-ended class.
6. The mean is affected by extremely high or low values, called outliers, and may not be the appropriate average to use in these situations.

The Median

1. The median is used to find the center or middle value of a data set.
2. The median is used when it is necessary to find out whether the data values fall into the upper half or lower half of the distribution.
3. The median is used for an open-ended distribution.
4. The median is affected less than the mean by extremely high or extremely low values.

The Mode

1. The mode is used when the most typical case is desired.
2. The mode is the easiest average to compute.
3. The mode can be used when the data are nominal or categorical, such as religious preference, gender, or political affiliation.
4. The mode is not always unique. A data set can have more than one mode, or the mode may not exist for a data set.

The Midrange

1. The midrange is easy to compute.
2. The midrange gives the midpoint.
3. The midrange is affected by extremely high or low values in a data set.