



Διαγωνισμός Στατιστικής 2021.

Questionnaire checking

B - Γυμνασιακός κύκλος

1 - Τεστ βασικών γνώσεων

Εκδοχή: 1 Γλώσσα: en

1. **The semester grade for a course at Gymnasium is derived as follows:**
 - a) Quizzes (four in total): 5% each
 - b) Tests (two in total): 18%
 - c) Homework 30%
 - d) Participation in the course: 22%
 - e) Assessment of class notes: 10%

. The grades of a student in a specific course were: Mean score of the two tests 78/100, homework 85/100, participation in the course 90/100, class notes 89/100. Student's grades in the four quizzes were 16/20, 15/20, 18/20 and 19/20, respectively. The semester grade for this course, for this student is:

 - A. 17,0/20
 - B. 16,4/20
 - C. 16,9/20
 - D. 16,7/20

2. **According to the latest census of the Statistical Service of Cyprus, the total number of regular residences was 297122, of which 204039 were in urban and 93083 in rural areas. Their distribution by province is given in the table below.**

For a survey it was decided to select a sample of 2.5% of the total population of regular residences in Cyprus. This size is to be distributed proportionally in urban and rural areas both nationwide and by province. What will the sample size of regular residences for the Pafos urban area be (rounded up to the nearest integer)?

	Urban	Rural
Nicosia	88359	28035
Ammochostos	0	15616
Larnaca	29370	19671
Limassol	64093	19534
Pafos	22217	10227

- A. 256
- B. 555
- C. 5555
- D. 2557

3. The table below shows the population in the European Union as well as in various European countries between 2015 and 2019. What is the ratio of the percentage of population growth in Cyprus between 2015 and 2019 to the rate of population growth in the European Union, in the corresponding period?

GEO/TIME	2015	2016	2017	2018	2019
European Union	443,666,812	444,802,830	445,534,430	446,098,424	446,824,564
Belgium	11,237,274	11,311,117	11,351,727	11,398,589	11,455,519
Bulgaria	7,202,198	7,153,784	7,101,859	7,050,034	7,000,039
Czechia	10,538,275	10,553,843	10,578,820	10,610,055	10,649,800
Denmark	5,659,715	5,707,251	5,748,769	5,781,190	5,806,081
Germany	81,197,537	82,175,684	82,521,653	82,792,351	83,019,213
Estonia	1,314,870	1,315,944	1,315,635	1,319,133	1,324,820
Ireland	4,677,627	4,726,286	4,784,383	4,830,392	4,904,240
Greece	10,858,018	10,783,748	10,768,193	10,741,165	10,724,599
Spain	46,449,565	46,440,099	46,528,024	46,658,447	46,937,060
France	66,458,153	66,638,391	66,809,816	66,918,941	67,012,883
Croatia	4,225,316	4,190,669	4,154,213	4,105,493	4,076,246
Italy	60,795,612	60,665,551	60,589,445	60,483,973	60,359,546
Cyprus	847,008	848,319	854,802	864,236	875,899
Latvia	1,986,096	1,968,957	1,950,116	1,934,379	1,919,968
Lithuania	2,921,262	2,888,558	2,847,904	2,808,901	2,794,184
Luxembourg	562,958	576,249	590,667	602,005	613,894

- A. 2,4
- B. 3,4

C. 4,8

D. 0,2

4. George has 65 cents in his pocket in coins (the Euro has 5c, 10s, 20c and 50c coins). What is the probability that George has more than 3 coins of 10 cents in his pocket?

A. 0,78

B. 0,5

C. 0,67

D. 0,22

5. Let the positive integers 1, 2, 3, x, 7, 6, 4, 1, 2, y. If 1 and 2 are the mode numbers, the mean is 4 and $x < y$, then the value of y is:

A. 0,1587

B. 0,1950

C. 0,0975

D. 0,8413

6. In a box there are yellow, green, blue, and black balls. The blue ones are twice the green ones. The yellows are 16 and the black ones are 6. The probability of randomly selecting a yellow ball is $P=0.4$. The probability of randomly selecting a blue ball is:

A. 0,15

B. 0,3

C. 0,45

D. 0,225

7. The table below shows the results of a survey in which 146 people were asked if they are university graduates and if they plan to go on vacation next summer.

A person is randomly selected from the research sample. Find the probability that the selected person is planning summer vacations given that he/she is a university graduate.

		I will go on vacation next summer		
		YES	NO	TOTAL
I am a university graduate				
	YES	87	28	115
	NO	14	17	31
	TOTAL	101	45	146

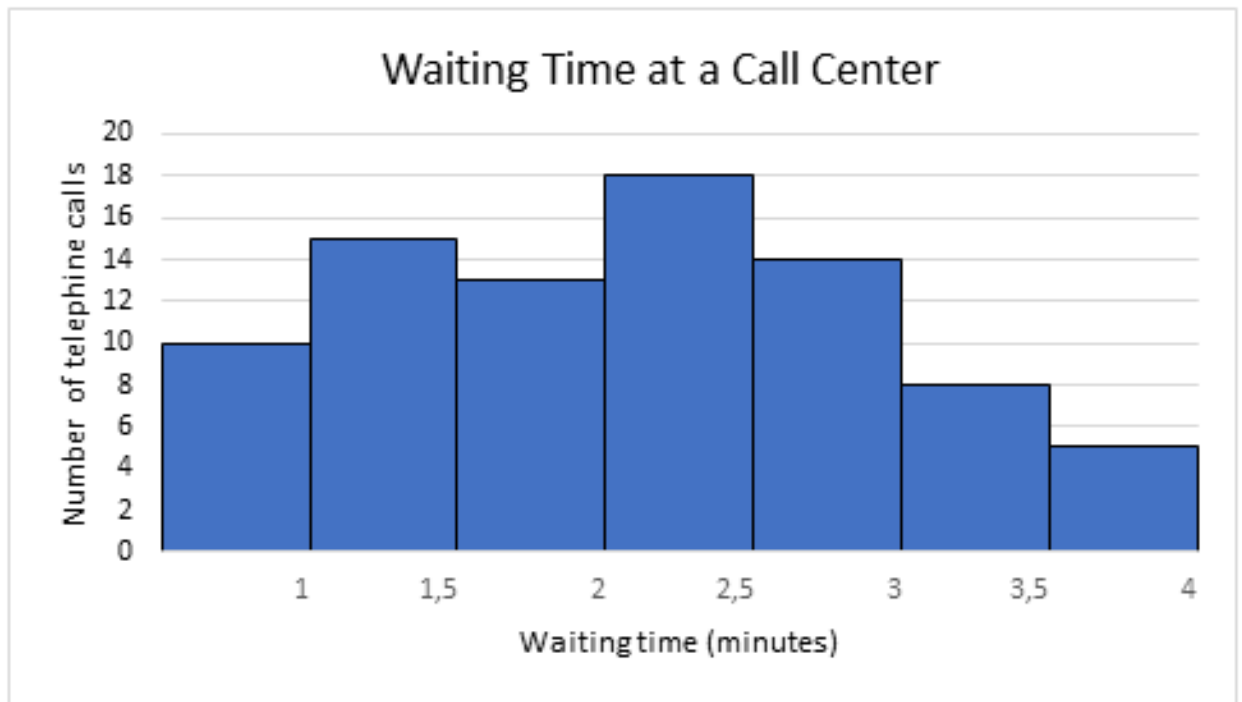
- A. 0,62
- B. 0,86
- C. 0,76
- D. 0,66

8. Twelve observations are taken from a population and ordered in ascending order. If the median is 18,6 and the mean is 17,97 then the ratio of x to y is:

9,2	12,5	x	x	x	17,4	y	y	21	23,2	23,2	24,2
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- A. 1,311
- B. 2,288
- C. 0,437
- D. 0,763

9. The following diagram shows the waiting time at a company's call center for a number of customers during a working day. Use the diagram to calculate the probability that a random phone call during the day will be served in less than 2 minutes.



- A. 0,301
- B. 0,458
- C. 0,542
- D. 0,309

10. A survey on the number of children in families yielded the results presented in the table that follows. In the pie chart illustrating this data, the central angle for families with one child is:

2	3	1	2	1	2	3	1	2
6	1	2	3	3	4	1	5	2
3	2	1	2	1	2	4	5	2
2	2	3	1	1	3	1	1	2
2	3	4	2	3				

- A. $96,59^\circ$
- B. $87,8^\circ$
- C. $105,37^\circ$

D. 99°



Διαγωνισμός Στατιστικής 2021.

Questionnaire checking

B - Γυμνασιακός κύκλος

1 - Τεστ βασικών γνώσεων

Εκδοχή: 2 Γλώσσα: en

1. The semester grade for a course at Gymnasium is derived as follows:
- Quizzes (four in total): 5% each
 - Tests (two in total): 18%
 - Homework 30%
 - Participation in the course: 22%
 - Assessment of class notes: 10%
- . The grades of a student in a specific course were: Mean score of the two tests 81/100, homework 79/100, participation in the course 95/100, class notes 85/100. Student's grades in the four quizzes were 18/20, 17/20, 12/20 and 20/20, respectively. The semester grade for this course, for this student is:
- 17,4/20
 - 16,9/20
 - 18,0/20
 - 17,8/20
2. According to the latest census of the Statistical Service of Cyprus, the total number of regular residences was 297122, of which 204039 were in urban and 93083 in rural areas. Their distribution by province is given in the table that follows. For a survey it was decided to select a sample of 2.5% of the total population of regular residences in Cyprus. This size is to be distributed proportionally in urban and rural areas both nationwide and by province. What will the sample size of regular residences for the Larnaca urban area be (rounded up to the nearest integer)?

	Urban	Rural
Nicosia	88359	28035
Ammochostos	0	15616
Larnaca	29370	19671
Limassol	64093	19534
Pafos	22217	10227

- A. 492
- B. 7343
- C. 734
- D. 4918

3. The table below shows the population in the European Union as well as in various European countries between 2015 and 2019. What is the ratio of the percentage of population growth in Cyprus between 2015 and 2019 to the rate of population growth in Germany, in the corresponding period?

GEO/TIME	2015	2016	2017	2018	2019
European Union	443,666,812	444,802,830	445,534,430	446,098,424	446,824,564
Belgium	11,237,274	11,311,117	11,351,727	11,398,589	11,455,519
Bulgaria	7,202,198	7,153,784	7,101,859	7,050,034	7,000,039
Czechia	10,538,275	10,553,843	10,578,820	10,610,055	10,649,800
Denmark	5,659,715	5,707,251	5,748,769	5,781,190	5,806,081
Germany	81,197,537	82,175,684	82,521,653	82,792,351	83,019,213
Estonia	1,314,870	1,315,944	1,315,635	1,319,133	1,324,820
Ireland	4,677,627	4,726,286	4,784,383	4,830,392	4,904,240
Greece	10,858,018	10,783,748	10,768,193	10,741,165	10,724,599
Spain	46,449,565	46,440,099	46,528,024	46,658,447	46,937,060
France	66,458,153	66,638,391	66,809,816	66,918,941	67,012,883
Croatia	4,225,316	4,190,669	4,154,213	4,105,493	4,076,246
Italy	60,795,612	60,665,551	60,589,445	60,483,973	60,359,546
Cyprus	847,008	848,319	854,802	864,236	875,899
Latvia	1,986,096	1,968,957	1,950,116	1,934,379	1,919,968
Lithuania	2,921,262	2,888,558	2,847,904	2,808,901	2,794,184
Luxembourg	562,958	576,249	590,667	602,005	613,894

- A. 3,4

B. 0,7

C. 7,7

D. 1,5

4. George has 65 cents in his pocket in coins (the Euro has 5c, 10s, 20c and 50c coins).What is the probability that George has less than 3 coins of 10 cents in his pocket?

A. 0,67

B. 0,33

C. 0,39

D. 0,78

5. A six-sided dice is made in such a way that when rolled, the probability of a number to turn up is proportional to its value. The dice is rolled twice.What is the probability that the sum of the numbers turned up is 6?

A. 0,0998

B. 0,0794

C. 0,0499

D. 0,9206

6. In a box there are yellow, green, blue, and black balls. The blue ones are twice the green ones. The yellows are 15 and the black ones are 11. The probability of randomly selecting a yellow ball is $P=0.3$. The probability of randomly selecting a blue ball is:

A. 0,16

B. 0,48

C. 0,32

D. 0,24

7. The following table shows the results of a survey in which 146 people were asked if they are university graduates and if they plan to go on vacation next summer. A person is randomly selected from the research sample. Find the probability that the selected person is planning summer vacations given that he/she is not a university graduate.

		I will go on vacation next summer		
		YES	NO	TOTAL
I am a university graduate				
	YES	87	28	115
	NO	14	17	31
	TOTAL	101	45	146

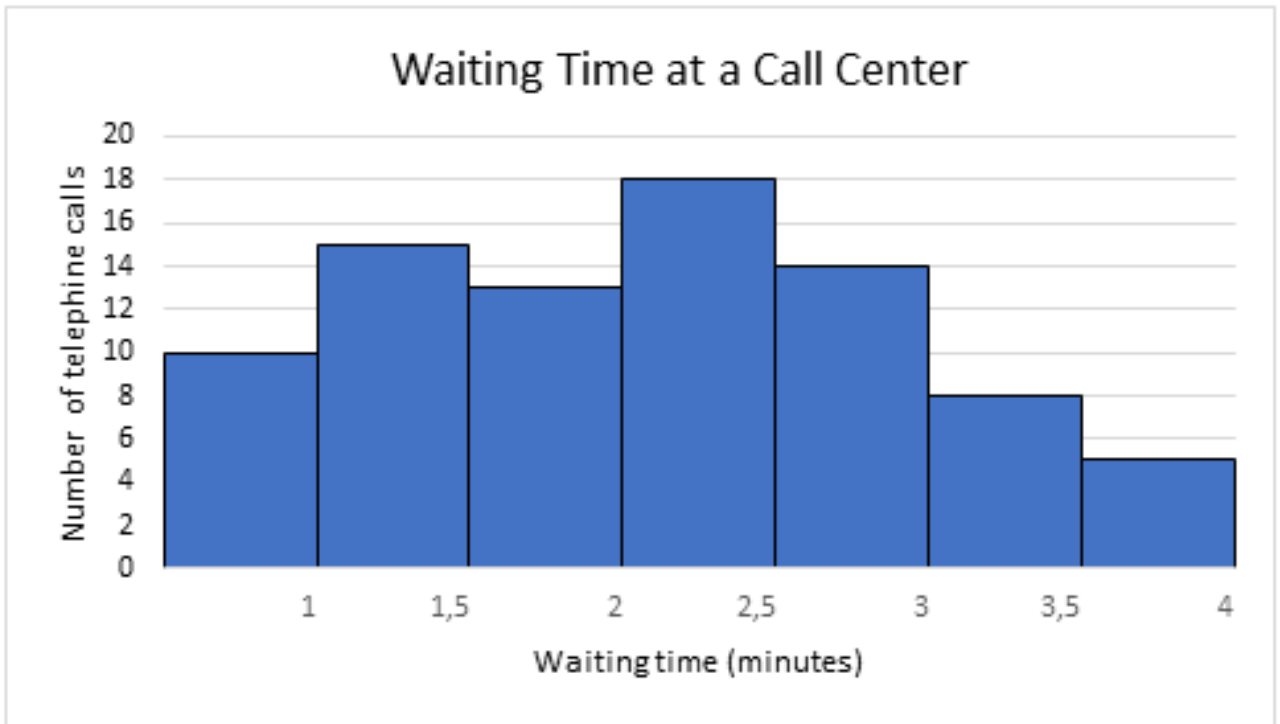
- A. 0,10
- B. 0,14
- C. 0,55
- D. 0,45

8. Twelve observations are taken from a population and ordered in ascending order. If the median is 18,8 and the mean is 19,98 then the ratio of x to y is:

15,9	16,1	x	x	18	18	y	y	y	22	27,4	28,6
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- A. 0,893
- B. 1,12
- C. 1,786
- D. 0,56

9. The following diagram shows the waiting time at a company's call center for a number of customers during a working day. Use the diagram to calculate the probability that a random phone call during the day will be served between 3 to 4 minutes.



- A. 0,325
- B. 0,156
- C. 0,265
- D. 0,333

10. A survey on the number of children in families yielded the results presented in the table that follows. In the pie chart illustrating this data, the central angle for families with three children is:

2	3	1	2	1	2	3	1	2
6	1	2	3	3	4	1	5	2
3	2	1	2	1	2	4	5	2
2	2	3	1	1	3	1	1	2
2	3	4	2	3				

- A. $131,71^\circ$
- B. $122,93^\circ$
- C. $140,49^\circ$

D. 135°



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Questionnaire checking

B - Γυμνασιακός κύκλος

1 - Τεστ βασικών γνώσεων

Εκδοχή: 3 Γλώσσα: en

1. The semester grade for a course at Gymnasium is derived as follows:
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 - Tests (two in total): 18%
 - Homework 30%
 - Participation in the course: 22%
 - Assessment of class notes: 10%
- . The grades of a student in a specific course were: Mean score of the two tests 65/100, homework 95/100, participation in the course 88/100, class notes 90/100. Student's grades in the four quizzes were 15/20, 13/20, 12/20 and 19/20, respectively. The semester grade for this course, for this student is:
- 17,6/20
 - 17,0/20
 - 16,7/20
 - 16,6/20
2. According to the latest census of the Statistical Service of Cyprus, the total number of regular residences was 297122, of which 204039 were in urban and 93083 in rural areas. Their distribution by province is given in the table that follows. For a survey it was decided to select a sample of 2.5% of the total population of regular residences in Cyprus. This size is to be distributed proportionally in urban and rural areas both nationwide and by province. What will the sample size of regular residences for the Limassol urban area be (rounded up to the nearest integer)?

	Urban	Rural
Nicosia	88359	28035
Ammochostos	0	15616
Larnaca	29370	19671
Limassol	64093	19534
Pafos	22217	10227

- A. 16023
- B. 488
- C. 4884
- D. 1602

3. The table below shows the population in the European Union as well as in various European countries between 2015 and 2019. What is the ratio of the percentage of population growth in Cyprus between 2015 and 2019 to the rate of population growth in France, in the corresponding period?

GEO/TIME	2015	2016	2017	2018	2019
European Union	443,666,812	444,802,830	445,534,430	446,098,424	446,824,564
Belgium	11,237,274	11,311,117	11,351,727	11,398,589	11,455,519
Bulgaria	7,202,198	7,153,784	7,101,859	7,050,034	7,000,039
Czechia	10,538,275	10,553,843	10,578,820	10,610,055	10,649,800
Denmark	5,659,715	5,707,251	5,748,769	5,781,190	5,806,081
Germany	81,197,537	82,175,684	82,521,653	82,792,351	83,019,213
Estonia	1,314,870	1,315,944	1,315,635	1,319,133	1,324,820
Ireland	4,677,627	4,726,286	4,784,383	4,830,392	4,904,240
Greece	10,858,018	10,783,748	10,768,193	10,741,165	10,724,599
Spain	46,449,565	46,440,099	46,528,024	46,658,447	46,937,060
France	66,458,153	66,638,391	66,809,816	66,918,941	67,012,883
Croatia	4,225,316	4,190,669	4,154,213	4,105,493	4,076,246
Italy	60,795,612	60,665,551	60,589,445	60,483,973	60,359,546
Cyprus	847,008	848,319	854,802	864,236	875,899
Latvia	1,986,096	1,968,957	1,950,116	1,934,379	1,919,968
Lithuania	2,921,262	2,888,558	2,847,904	2,808,901	2,794,184
Luxembourg	562,958	576,249	590,667	602,005	613,894

- A. 4,1
- B. 2,8
- C. 0,2
- D. 3,4

4. George has 65 cents in his pocket in coins (the Euro has 5c, 10s, 20c and 50c coins).What is the probability that George has less than 2 coins of 20 cents in his pocket?

- A. 0,22
- B. 0,78

- C. 0,5
- D. 0,67

5. A six-sided dice is made in such a way that when rolled, the probability of a number to turn up is proportional to its value. The dice is rolled twice. What is the probability that the sum of the numbers turned up is 4?

- A. 0,0317
- B. 0,0159
- C. 0,0227
- D. 0,9773

6. In a box there are yellow, green, blue, and black balls. The blue ones are twice the green ones. The yellows are 20 and the black ones are 9. The probability of randomly selecting a yellow ball is $P=0.4$. The probability of randomly selecting a blue ball is:

- A. 0,14
- B. 0,42
- C. 0,21
- D. 0,28

7. The following table shows the results of a survey in which 146 people were asked if they are university graduates and if they plan to go on vacation next summer. A person is randomly selected from the research sample. Find the probability that the selected person is not planning summer vacations given that he/she is a university graduate.

		I will go on vacation next summer		
		YES	NO	TOTAL
I am a university graduate	YES	87	28	115
	NO	14	17	31
	TOTAL	101	45	146

- A. 0,24
- B. 0,62
- C. 0,76

D. 0,55

8. Twelve observations are taken from a population and ordered in ascending order. If the median is 21.6 and the mean is 21,78 then the ratio of x to y is:

12,1	15,5	19	x	x	x	22	23,6	y	y	26,9	27,1
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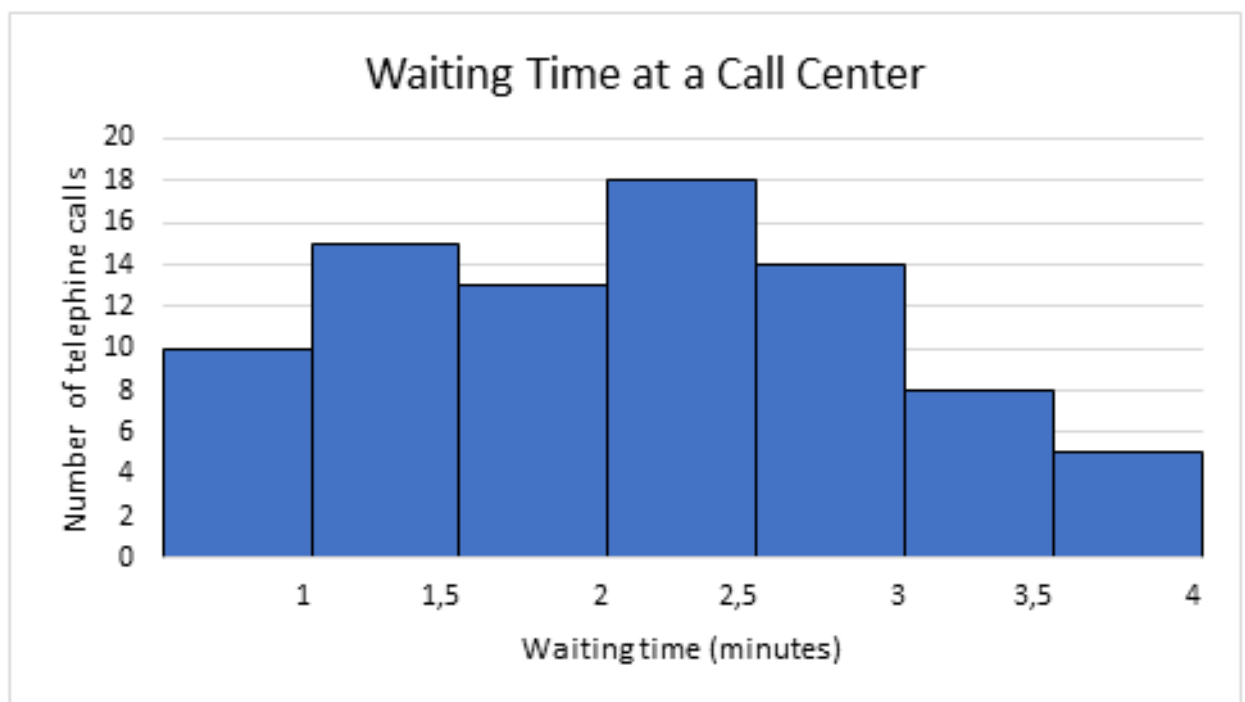
A. 1,217

B. 0,822

C. 2,434

D. 0,4109

9. The following diagram shows the waiting time at a company's call center for a number of customers during a working day. Use the diagram to calculate the probability that a random phone call during the day will be served in more than 2 minutes.



A. 0,542

B. 0,325

C. 0,301

D. 0,556

10. A survey on the number of children in families yielded the results presented on the table that follows. In the pie chart illustrating this data, the central angle for families with three children is:

2	3	1	2	1	2	3	1	2
6	1	2	3	3	4	1	5	2
3	2	1	2	1	2	4	5	2
2	2	3	1	1	3	1	1	2
2	3	4	2	3				

- A. $79,02^\circ$
- B. $70,24^\circ$
- C. $87,8^\circ$
- D. 81°