

TEST NAME: **SP.4 NEW**  
TEST ID: **873300**  
GRADE: **08 - Eighth Grade**  
SUBJECT: **Mathematics**  
TEST CATEGORY: **School Assessment**

Student: \_\_\_\_\_

Class: \_\_\_\_\_

Date: \_\_\_\_\_

1. The numbers of students enrolled in a foreign language class in Grades 6, 7, and 8 at Bradley Middle School are shown in the table.

Bradley Middle School

	Foreign Language			
	Spanish	French	Italian	German
Grade 6	8	13	11	10
Grade 7	11	13	5	15
Grade 8	28	13	30	20

Which value is closest to the percentage of the Grade 7 students enrolled in French or German?

- A. 23
  - B. 28
  - C. 47
  - D. 64
2. A company counted the number of people who visited a restaurant over several days.

	Weekday	Weekend
Child	221	187
Adult	179	148

Based on the chart, which statement is true?

- A. More children than adults visited the restaurant.
- B. Over half of the total people that visited the restaurant were adults.
- C. More people visited the restaurant on the weekend than during the week.
- D. About 45% of the people that visited the restaurant on the weekend were children.

3. A survey asked students at a middle school the number of siblings they have. The results are shown in the table below.

	0 Siblings	1 Sibling	2 Siblings	3 or More Siblings
6th Grade	32	129	98	62
7th Grade	47	92	108	58
8th Grade	23	108	101	64

**About** what percent of the students had no siblings?

- A. 4%
  - B. 5%
  - C. 11%
  - D. 13%
4. The table below shows the survey results of 100 students who were asked 2 questions: “Do you play a sport?” and “Do you play a musical instrument?”

Survey Results

Do You Play a Musical Instrument?	Do You Play a Sport?	
	Yes	No
Yes	18	19
No	42	21

**Based on the survey results, which statement is the most accurate?**

- A. Students who play a sport also tend to play a musical instrument.
- B. Students who play a sport do not tend to play a musical instrument.
- C. Students who do not play a sport tend to play a musical instrument.
- D. Students who do not play a sport also tend not to play a musical instrument.

5. The frequency table shows the number of books some students read last summer.

	<b>Boys</b>	<b>Girls</b>	<b>Total</b>
<b>0–1</b>	32	27	59
<b>2–3</b>	41	36	77
<b>4–5</b>	25	48	73
<b>6 or more</b>	15	24	39
<b>Total</b>	113	135	248

Based on the data in the table, which statement is true?

- A. Six more boys read 2 – 3 books than girls who read 2 – 3 books.
  - B. Exactly twice as many boys read 0 – 1 book than read 6 or more books.
  - C. Twice as many girls read 6 or more books than girls who read 4 – 5 books.
  - D. Nine more girls read 6 or more books than boys who read 6 or more books.
6. Maya surveyed the students at her school about whether they were in the school band. She created the table below to summarize the data.

	<b>In the Band</b>	<b>Not in the Band</b>
<b>Boys</b>	8	21
<b>Girls</b>	9	30

About what percentage of the students in the band are girls?

- A. 23%
- B. 28%
- C. 47%
- D. 53%

7. Natalie asked students in her school if they had taken a foreign language class. The responses are in the table below.

	<b>Taken a Foreign Language</b>	<b>Not Taken a Foreign Language</b>
<b>Boys</b>	27	13
<b>Girls</b>	33	7

Based on the table, which statement is true?

- A. More boys than girls have taken a foreign language class.
  - B. 60% of the students have taken a foreign language class.
  - C. 25% of the students have not taken a foreign language class.
8. A survey was given to students at a high school to determine how they get to school most of the time. The results are shown in the table.

	<b>Boy</b>	<b>Girls</b>
<b>Drive Themselves</b>	88	90
<b>Take the bus</b>	17	18
<b>Ride with Parents</b>	54	58
<b>Walk</b>	56	58
<b>Other</b>	10	51
<b>Total</b>	225	275

Which statement is **not** true according to the results of this survey?

- A. A higher percentage of girls than boys walk to school.
- B. A higher percentage of boys than girls drive to school.
- C. A lower percentage of girls than boys take the bus to school.
- D. A lower percentage of girls than boys ride with their parent to school.

9. The relative frequencies of male and female students who voted for student council president are shown in the table.

**Student Council President  
Voting Results**

	<b>Male Voters</b>	<b>Female Voters</b>	<b>Male and Female</b>
<b>Candidate K</b>	54%	44%	48%
<b>Candidate L</b>	46%	56%	52%
<b>Total</b>	100%	100%	100%

Based on the data in the table, which statement must be true?

- A. There were 54 male votes for Candidate K.
  - B. Of the students who voted, 50% were females.
  - C. There were 4% more votes for Candidate L than Candidate K.
  - D. The number of female votes for Candidate L was greater than the number of male votes for Candidate K.
10. The 8th-grade students at a middle school were surveyed to see which high school they will attend in the fall. The results are shown in the table below.

	<b>North Hill</b>	<b>Easterly</b>	<b>Southern</b>
<b>Girls</b>	99	63	71
<b>Boys</b>	110	72	53

Based on the table above, which statement is true?

- A. Over half of the students will attend North Hill.
- B. Over one-third of the students will attend Easterly.
- C. About 25% of the boys will attend North Hill.
- D. About 30% of the girls will attend Southern.

11. A teacher surveyed the boys and girls in the 8th grade on the type of meal they would prefer for an end-of-year party. The results are listed below.

	<b>Chicken</b>	<b>Beef</b>	<b>Vegetarian</b>
<b>Boys</b>	77	40	97
<b>Girls</b>	86	79	75

Which statement below accurately represents the data?

- A. About 40% of the boys prefer a beef meal.
  - B. About 50% of the girls prefer a chicken meal.
  - C. About half of the students prefer a vegetarian meal.
  - D. About the same percent of girls and boys prefer a chicken meal.
12. A company asked 250 customers which topping they liked most on their pizza. The responses are shown in the table below.

	<b>Pepperoni</b>	<b>Sausage</b>	<b>Extra Cheese</b>
<b>Males</b>	61	29	39
<b>Females</b>	49	34	38

Based on the responses, which statement is true?

- A. Over 50% of the customers liked pepperoni most.
- B. About 25% of the customers liked sausage most.
- C. More females than males liked extra cheese most.

13. Ms. Thomas surveyed 70 people about raising the speed limit on the highway. The results are shown in the relative frequency table shown.

**Speed Limit Survey**

	<b>Favor</b>	<b>Oppose</b>	<b>No Opinion</b>	<b>Total</b>
<b>Male</b>	0.70	0.25	0.05	1.00
<b>Female</b>	0.47	0.50	0.03	1.00
<b>Total</b>	0.60	0.36	0.04	1.00

Based on the data in the table, how many of those surveyed are in favor of raising the speed limit?

- A. 25
  - B. 41
  - C. 42
  - D. 60
14. At a school, 200 students were asked whether they prefer apple juice or orange juice. The students' responses are in the table below.

	<b>Apple Juice</b>	<b>Orange Juice</b>
<b>Girls</b>	55	45
<b>Boys</b>	40	60

Based on the survey results, which statement is true?

- A. More students preferred apple juice than orange juice.
- B. More girls preferred orange juice than apple juice.
- C. More boys preferred orange juice than apple juice.



15. Travel agents were designing a marketing program to promote tourism in Canada. To determine the target audience for their program, the travel agents surveyed people across two different age groups about whether they have been to Canada in the past six months. The table below shows the results of the survey.

	Have been to Canada	Have not been to Canada
Age less than 22 years	22	13
Age more than 22 years	14	24

About what percent of the people in the age group of less than 22 years have been to Canada?

- A. 30%
  - B. 37%
  - C. 48%
  - D. 63%
16. The manager of a school cafeteria randomly surveyed 50 boys and 50 girls about their favorite menu item on Friday. A relative frequency table shows the results of the survey.

**Food Survey**

	Pizza	Salad	Hamburgers	Total
Boys	0.68	0.18	0.43	0.50
Girls	0.32	0.82	0.57	0.50
Total	1.00	1.00	1.00	1.00

Based on the data, which statement must be true?

- A. Exactly twice as many boys chose pizza as their favorite menu item as girls.
- B. Twenty five more boys chose pizza as their favorite menu item over hamburgers.
- C. Both boys and girls chose hamburgers as their favorite menu item more than pizza or salad combined.
- D. The percentage of girls that chose salad was more than four times greater than the percentage of boys that chose salad.

17. Seventh and eighth grade students were asked whether they preferred pizza or tacos. The results of the survey are shown in the table below.

	Pizza	Tacos
Seventh Graders	33	35
Eighth Graders	42	10

What is the relative frequency of a student being an eighth grader given that they prefer pizza?

- A. 0.08
  - B. 0.22
  - C. 0.81
  - D. 0.56
18. The frequency table shows the number of students participating in a fall sport at school.

**Fall Sports**

	Swimming	Soccer	Basketball	Total
Boys	11	42	27	80
Girls	10	36	38	84
Total	21	78	65	164

What is the ratio of the number of girls who participated in soccer to the number of girls who participated in basketball?

- A. 9:41
- B. 6:13
- C. 18:19
- D. 19:18

19. Joseph surveyed the students in his class about their favorite subject and favorite sport. The table below shows the results of his survey.

	English	Math	Total
Swimming	8	14	22
Basketball	7	10	17
Total	15	24	39

What is the relative frequency of the students in Joseph's class who like both math and swimming to the total number of students who like math better than English?

- A. 0.63  
B. 0.62  
C. 0.58  
D. 0.36
20. In a survey, 200 people were asked if they had a computer and a newspaper subscription. The results are shown in the table below.

	Computer	No Computer
Newspaper Subscription	35	42
No Newspaper Subscription	108	15

How many people do not have a newspaper subscription?

- A. 15  
B. 57  
C. 108  
D. 123

21. An airline wants to replace many of its older airplanes. The table below shows the number of each type of airplane the airline owns and the average age of the airplanes.

**Airline’s Aging Fleet of Airplanes**

Type	Number of Planes	Average Age (years)
Airbus A300-600 R	34	17
Boeing 737-800	77	7
Boeing 757-200	142	12
Boeing 767-200ER	15	20
Boeing 767-300ER	58	13
McDonnell Douglas MD-80	325	17

Which is an accurate statement based on the data?

- A. Twice as many airplanes are of a type with an average age of 12 years as of a type with an average age of 7 years.
  - B. There are a greater number of Boeing airplanes than of all the other types combined.
  - C. Most of the airplanes listed are of a type with an average age of less than 17 years.
  - D. At least 275 airplanes are of a type with an average age less than 17 years.
22. Mr. Williams asked his students how long they studied for their last test. The responses are in the table below.

	1 hour or more	Less than 1 hour
<b>Boys</b>	29	31
<b>Girls</b>	36	24

Based on the table, **about** what percentage of the students studied 1 hour or more for the test?

- A. 50%
- B. 54%
- C. 65%

23. The principal surveyed students in 6th and 7th grade on whether they participated in the school fundraiser. The results of the survey are shown in the table below.

	Yes	No
6th	79	44
7th	69	83

Based on the table, which statement is true?

- A. About 54% of the students participated in the fundraiser.
  - B. About 79% of the 6th grade students participated in the fundraiser.
  - C. More 7th grade students participated in the fundraiser than 6th grade students.
  - D. Most students did not participate in the fundraiser.
24. Samantha surveyed students about implementing a dress code at her school. The results of the survey are shown in the frequency table.

**Dress Code Survey**

	For	Against	No Opinion	Total
Grade 6	12	15	3	30
Grade 7	5	21	4	30
Grade 8	4	24	2	30
Total	21	60	9	90

What percent of seventh graders are against implementing a dress code?

- A. 17%
- B. 23%
- C. 35%
- D. 70%

25. A teacher asked 75 students which lunch served in the cafeteria was their favorite. The responses are shown below.

	Pizza	Cheeseburgers	Tacos
Girls	10	10	15
Boys	15	10	15

Based on the table, which statement is true?

- A. More students chose pizza than cheeseburgers.
- B. More students chose pizza than tacos.
- C. More girls than boys chose tacos.

26. Each of 300 students is classified according to physical fitness and academic achievement levels.

Physical Fitness and Academic Achievement Levels

		Academic Achievement Level			
		Low	Medium	High	Total
Physical Fitness Level	Low	50	25	10	85
	Medium	15	25	35	75
	High	5	60	75	140
	Total	70	110	120	300

Which statement supports the data?

- A. Of the students with high physical fitness, more than half have medium academic achievement.
- B. Of the students with medium physical fitness, more than half have high academic achievement.
- C. Of the students with high academic achievement, more than half have medium physical fitness.
- D. Of the students with medium academic achievement, more than half have high physical fitness.

27. A random sample of students at a middle school were asked whether they preferred to play soccer or hockey. The results of the survey are shown in the table below.

	Soccer	Hockey
Sixth Graders	30	10
Seventh Graders	33	65
Eighth Graders	42	28

Which conclusion reflects the patterns of association in the table?

- A. Hockey is more popular than soccer at the middle school.
  - B. A greater percentage of eighth graders prefer soccer than sixth graders.
  - C. A greater percentage of seventh graders prefer soccer than sixth graders.
  - D. Seventh graders are more likely to prefer hockey than are sixth or eighth graders.
28. **After a recent trip to the zoo, students were asked to write a statement about the big cats at the zoo. Which of the statements uses categorical data?**
- A. There were 6 lions at the zoo.
  - B. There are 22 big cats at the zoo.
  - C. There were jaguars, lions, and tigers at the zoo.
  - D. There were 2 more tigers than jaguars at the zoo.

29. A bowling alley provides bowling balls with weights of 11, 12, 13, and 14 pounds. This information is shown in the table along with the number of bowling balls used by 120 student bowlers in Grades 6, 7, and 8.

Student Bowlers

Bowling Ball Weight (pounds)	Grade 6	Grade 7	Grade 8
11	20	10	0
12	9	15	11
13	6	20	4
14	5	5	15

What fraction of student bowlers in Grade 7 used a 13-pound bowling ball?

- A.  $\frac{1}{6}$
- B.  $\frac{1}{5}$
- C.  $\frac{2}{5}$
- D.  $\frac{2}{3}$

30. The table shows the data a teacher collected about how her students performed on a test and whether the students completed the review for the test.

	Complete Review	Did not complete review	Total
Score at least a 90 out of 100 on test	34	6	40
Scored below a 90 out of 100 on test	16	4	20
Total	50	10	60

Which explanation **best** justifies the students' test scores based on the data?

- A. Most of the students who scored at least a 90 completed the review.
- B. Most of the students who did not complete the review scored below a 90.
- C. Students who completed the review scored at least a passing grade.
- D. Students who scored below a passing grade did not attempt the review.



31. At a school, students were surveyed about their preference of ice cream flavor. The results are shown in the table below.

	<b>Vanilla</b>	<b>Chocolate</b>	<b>Strawberry</b>
<b>7th Grade</b>	58	62	30
<b>8th Grade</b>	38	79	45

Based on the table, **about** what percent of the students preferred Chocolate ice cream?

- A. 20%
- B. 25%
- C. 45%
- D. 78%

32. Students in 8th grade were asked which type of candy they prefer. The results are shown in the table below.

	<b>Chocolate</b>	<b>Mint</b>	<b>Orange</b>
<b>Male</b>	34	35	36
<b>Female</b>	38	27	35

Based on the table, which statement is true?

- A. About 30% of the students prefer Mint.
- B. About 50% of the students prefer Orange.
- C. About 20% of the students prefer Orange.
- D. About 40% of the students prefer Chocolate.

33. The owner of a local ice cream shop asked customers what ice cream flavor they preferred. The customers' responses are in the table below.

	<b>Chocolate</b>	<b>Vanilla</b>	<b>Strawberry</b>
<b>Children</b>	14	13	3
<b>Adults</b>	8	16	6

Based on the table, which statement is true?

- A. More customers preferred vanilla than chocolate.
  - B. More children than adults preferred strawberry.
  - C. More adults than children preferred chocolate.
34. A company surveyed 200 adults, asking if they exercise daily and how well they sleep at night. The responses are in the table below.

	<b>Sleeps Well</b>	<b>Does not Sleep Well</b>
<b>Exercises Daily</b>	88	24
<b>Does not Exercise Daily</b>	32	56

What percentage of the people surveyed exercise daily?

- A. 44%
- B. 56%
- C. 88%

35. In the eighth grade there are two homerooms, Mr. Kelly's and Mrs. Smith's. The number of boys and girls in each of these homerooms are given in the table.

	<b>Boys</b>	<b>Girls</b>
<b>Mr. Kelly</b>	15	11
<b>Mrs. Smith</b>	10	14

Based on the table, which statement is true?

- A. Mrs. Smith has more students in her homeroom.
  - B. There are more boys than girls in the eighth grade.
  - C. About 15% of the students in Mr. Kelly's homeroom are boys.
  - D. There are the same number of boys and girls in the eighth grade.
36. A teacher at an elementary school surveyed 4th and 5th-grade students to determine how many minutes they exercise after school. The results of the survey are shown in the table below.

	<b>0–30 Minutes</b>	<b>31–60 Minutes</b>	<b>More Than 60 Minutes</b>
<b>4th Grade</b>	61	52	29
<b>5th Grade</b>	74	23	16

**About** what percent of the students exercise More Than 60 Minutes?

- A. 18%
- B. 21%
- C. 23%
- D. 45%

37. Students at a school were surveyed to see how many hours per day they play video games. The results are shown in the table below.

	Less Than 1 Hour	1–3 Hours	More Than 3 Hours
6th Grade	40	62	97
7th Grade	53	78	18
8th Grade	38	91	31

Based on the table, which statement is true?

- A. Most students play more than 3 hours of video games per day.
  - B. Over 50% of students play 1–3 hours of video games per week.
  - C. More students play 1–3 hours of video games each day than any other amount of time.
  - D. More students play less than 1 hour of video games per day than any other amount of time.
38. Teachers attending a conference were offered four types of sandwiches for lunch. The number and types of sandwiches chosen by each male and female teacher are shown in the table below.

Teacher Conference

	Type of Sandwich			
	Chicken	Turkey	Tuna	Ham
Number of Males	23	47	25	55
Number of Females	23	31	11	15

Based on the table, which conclusion is reasonable?

- A. The percentage of male teachers who selected a ham sandwich is more than twice the percentage of all teachers who selected a tuna sandwich.
- B. The percentage of males who selected a chicken sandwich is exactly the same as the percentage of females who selected a chicken sandwich.
- C. The percentage of male teachers who selected a turkey sandwich is greater than the percentage of female teachers who selected a turkey sandwich.
- D. The percentage of female teachers who selected a turkey sandwich or ham sandwich is less than the percentage of male teachers who selected a turkey sandwich.

39. A survey was conducted by an automotive club about the type of vehicles that people prefer. The results are shown in the table.

	<b>Car</b>	<b>Truck</b>	<b>SUV</b>
<b>Males</b>	34	45	36
<b>Females</b>	37	36	48

Based on the table, which statement is true?

- A. Over 50% of males prefer an SUV.
  - B. Males prefer cars rather than trucks.
  - C. More females participated in the survey than males.
  - D. More than 45% of those who participated in the survey prefer SUVs.
40. The relative frequency table shows the relationship between left-handed and right-handed people and their eye color.

**Hand Dominance vs. Eye Color**

	<b>Left-handed</b>	<b>Right-handed</b>	<b>Total</b>
<b>Blue</b>	0.10	0.90	1.00
<b>Brown</b>	0.08	0.92	1.00
<b>Hazel</b>	0.12	0.88	1.00
<b>Green</b>	0.17	0.83	1.00
<b>Total</b>	0.11	0.89	1.00

Based on the table, which statement is true?

- A. Ten percent of the total number of people surveyed have blue eyes.
- B. Eight percent of people surveyed who have brown eyes are left-handed.
- C. Ninety percent of the total number of people surveyed are right-handed.
- D. Eighty-three percent of people surveyed who have green eyes are left-handed.

41. Hector tracked the number of weeks different genres of movies were shown at the local theater. He recorded the data in the table below.

	Fewer than 5 Weeks	5–10 Weeks	More than 10 Weeks
Comedy	3	5	6
Drama	2	4	2
Action	3	2	3
Other	5	1	0

Which statement is **best** supported by the table?

- A. A comedy is more likely to be shown for 5–10 weeks than a drama.
  - B. An action film is more likely to be shown for fewer than 5 weeks than a comedy.
  - C. A movie shown at the theater is more likely to be an action film than a drama.
  - D. A movie shown at the theater will most likely be shown for more than 10 weeks.
42. A teacher asked a class which ice cream flavor and toppings they prefer. The results of the survey are shown in the table.

	Hot Fudge	Caramel
Vanilla	8	5
Chocolate	7	4
Strawberry	2	2

Based on the table, which combination did 25% of the students prefer?

- A. vanilla and hot fudge
- B. chocolate and hot fudge
- C. vanilla and caramel
- D. strawberry and caramel

43. A survey of several adults was conducted to find out the number of males and females that enjoy running.

	Male	Female
Do not enjoy running	121	55
Enjoy running	20	11

Based on the table, *approximately* what percentage of those surveyed are male and enjoy running?

- A. 10%
  - B. 12%
  - C. 20%
  - D. 58%
44. A random survey was given to students at a high school about their participation in athletics. The relative frequencies of the data are recorded in the table.

**Athletic Participation Survey**

	Male	Female	All Students
Participate	0.45	0.31	0.38
Do Not Participate	0.55	0.69	0.62
Total	1.00	1.00	1.00

**Based on the data, which statement is true?**

- A. There are fourteen more males than females who participate in athletics.
- B. There are exactly twice as many females who do not participate in athletics as females who participate.
- C. The percentage of males who participate in athletics is greater than the percentage of males who do not participate.
- D. The percentage of students who do not participate in athletics is greater than the percentage of students who participate.

45. Some people buy football jerseys during a game to support their favorite team. The table below shows the number and type of jerseys bought last week at a football game.

Football Jerseys Bought

		Type of Jersey	
		Home	Away
Size of Jersey	Small	16	34
	Medium	24	26
	Large	20	30

Based on the data in the table, which statement must be true?

- A. The ratio of home jerseys bought to away jerseys bought was the same for every size of jersey bought.
  - B. The number of small away jerseys bought was more than twice the number of medium home jerseys bought.
  - C. The number of away jerseys bought was more than the number of home jerseys bought for every size of jersey bought.
  - D. The sum of the numbers of small and medium home jerseys bought was the same as the number of large away jerseys bought.
46. Three hundred students were surveyed to determine what they do after school. The results of the survey are shown in the table.

	Video Games	Sports	Reading
Males	67	51	31
Females	47	53	51

Based on the table, which statement is true?

- A. More males than females play sports after school.
- B. More females than males play video games after school.
- C. More than twice as many females as males read after school.
- D. More than twice as many males play video games after school than read.



47. Jasmine asked students if they have a job after school. Their responses are in the table below.

	Have a Job	Does Not Have a Job
Boys	22	68
Girls	38	54

Based on the table, **about** what percent of the students have a job after school?

- A. 33%
  - B. 52%
  - C. 60%
48. Students at a school were surveyed about their favorite cafeteria meal. The results are shown in the table below.

	Turkey Sandwich	Pizza	Chicken
6th Grade	45	69	48
7th Grade	33	142	37
8th Grade	42	128	45

Based on the table, how many students prefer Chicken and Turkey Sandwich?

- A. 120
- B. 130
- C. 250
- D. 339

49. All the students in 7th and 8th grade were asked what was their favorite subject. The results are listed in the table.

	Math	Reading	Science	Social Studies
7th	20	26	41	60
8th	32	15	38	42

Based on the table, which statement is true?

- A. 60% of the 7th graders prefer social studies.
- B. Most students in the 8th grade prefer science.
- C. More 8th graders prefer social studies over science.
- D. Over half of the 7th grade students prefer social studies.

50. Bobby surveyed students in his school to determine how many students wanted to increase the amount of time to eat lunch. He displayed his results in the table below.

Lunch Survey Results

		Response		
		Want to Increase the Time	Do Not Want to Increase the Time	No Opinion
Number of Students	Boys	35	19	6
	Girls	50	28	7

Based on Bobby's data, which statement is true?

- A. Twice as many girls as boys did not want to increase the time to eat lunch.
- B. A higher percentage of girls surveyed than boys surveyed had no opinion concerning the increase of time to eat lunch.
- C. The number of girls surveyed about wanting to increase the time to eat lunch was the same as the number of boys surveyed.
- D. The number of boys who wanted to increase the time to eat lunch was equal to the sum of the numbers of the girls who either had no opinion or did not want an increase.

51. A group of 40 students completed a survey in math class. They were asked about the time they usually go to bed before a school day and if they have any pets. The table below shows some of the data.

	Usually Go To Bed Before Midnight	Usually Go To Bed After Midnight	Total
Pets	22	?	
No Pets	?	2	
Total			40

In the survey, a total of 32 students reported they usually go to bed before midnight. Which subgroup has exactly 6 students?

- A. The students who have no pets and usually go to bed before midnight.
  - B. The students who have pets and usually go to bed after midnight.
  - C. The students who usually go to bed after midnight.
  - D. The students who have no pets.
52. The data below displays the answers from a survey given to students on their favorite color.

	Pink	Blue	Red	Green	Other
Female	12	9	8	7	4
Male	2	19	20	5	4

Using the data in the table, which statement is true?

- A. More than  $\frac{1}{2}$  of the males surveyed chose Red or Green as their favorite color.
- B. More females chose Pink or Blue as their favorite color than males.
- C. More than 30% of the students surveyed chose Red as their favorite color.
- D. More than 50% of the students surveyed chose Red or Green as their favorite color.

53. Ann owns 2 ice cream shops. She asked customers in both shops whether they prefer vanilla, chocolate, or swirl ice cream. The results of her survey are in the table.

	Vanilla	Chocolate	Swirl
Dreamery Shop	12	16	22
Oak St. Shop	17	14	19

Based on the table, which statement is true?

- A. More customers prefer single flavors of ice cream over the Swirl ice cream.
  - B. More customers prefer Vanilla ice cream than Chocolate.
  - C. One-third of the customers prefer Chocolate ice cream.
  - D. Over half of the customers prefer Swirl ice cream.
54. A group of 30 students completed a survey. They were asked about the time it takes them to get to school and whether they have any siblings. The table below shows some of the data.

	Takes 30 minutes or less to get to school	Takes more than 30 minutes to get to school	Total
Have siblings	12	?	
No siblings	?	4	
Total			30

In the survey, a total of 12 students reported it takes them more than 30 minutes to get to school. Which statement is true about the students who took the survey?

- A. A total of 20 students have siblings.
- B. A total of 12 students take 30 minutes or less to get to school.
- C. A total of 4 students have siblings and take more than 30 minutes to get to school.
- D. A total of 18 students have no siblings and take 30 minutes or less to get to school.

55. A survey was conducted to determine the type of footwear that people preferred to purchase. The results are presented in the table.

	<b>Sport Shoes</b>	<b>Boots</b>	<b>Sandals</b>
<b>Males</b>	64	53	43
<b>Females</b>	59	56	65

Based on the survey results, which statement is true?

- A. Over half of the males preferred boots.
  - B. Over half of the females preferred sport shoes.
  - C. More males preferred sandals than boots.
  - D. More females preferred sandals than boots.
56. **Customers of a department store were given coupons for a discount on their purchases. The number of customers per type of discount and the time of day are shown in the table below.**

Discount Coupon

		Type of Discount			
		5% off	10% off	15% off	20% off
Number of Customers	Morning	21	12	33	20
	Afternoon	19	40	11	35
	Evening	30	18	15	17

**Based on the table, which statement is true?**

- A. The fewest number of coupons given were 15%-off coupons in the afternoon.
- B. The greatest number of coupons given were 20%-off coupons in the afternoon.
- C. Customers were given 25% more coupons in the afternoon than in the evening.
- D. Customers were given more coupons in the evening than they were given in the morning.

57. A survey was conducted in the 7th and 8th grade to determine students' preference for pizza toppings. The results are shown in the table.

	<b>Cheese</b>	<b>Pepperoni</b>	<b>Sausage</b>
<b>7th Grade</b>	42	29	9
<b>8th Grade</b>	31	36	13

Based on the table, which statement is true?

- A. Over 40% of the students prefer Pepperoni.
- B. About 22% of the students prefer Sausage.
- C. More than half of the students prefer Cheese.
- D. More students prefer Cheese than prefer Pepperoni and Sausage combined.

58. A survey was conducted to determine the number of males and females registered as Democrat, Independent, or Republican. The results are shown in the table below.

	<b>Democrat</b>	<b>Independent</b>	<b>Republican</b>
<b>Females</b>	325	81	270
<b>Males</b>	254	41	285

Based on the table, *approximately* what percentage of those surveyed are male Republicans?

- A. 3%
- B. 20%
- C. 23%
- D. 26%

59. The relative frequency table below shows the results of a survey about the homes in a community.

Number of Stories	Number of Bedrooms			
	Three	Four	Five	Total
One	0.45	0.55	0.00	1.00
Two	0.33	0.58	0.09	1.00
Three	0.39	0.57	0.04	1.00

Using the table, which statement is supported by the data?

- A. All homes with five bedrooms have one story.
  - B. All two-story homes have three or four bedrooms.
  - C. A greater percentage of one-story homes than two-story homes have three bedrooms.
  - D. The number of two-story homes with four bedrooms is greater than the number of one-story homes with four bedrooms.
60. The 7th and 8th grade students at a school were surveyed to determine their favorite lunch. The table below shows the results of the survey.

	Pizza	Salad	Hamburgers
7th Grade	62	41	18
8th Grade	47	71	26

Based on the table, which statement is true?

- A. More 8th-graders than 7th-graders chose Pizza as their favorite lunch.
- B. Over half of the students chose Salad as their favorite lunch.
- C. About 20% of 7th-grade students chose Hamburgers as their favorite lunch.
- D. Three more students chose Salad as their favorite lunch than chose Pizza.

61. The cafeteria manager of a school asked the 6th- and 7th-grade students which meat they preferred for lunch. The results of the survey are in the table below.

	<b>Chicken</b>	<b>Turkey</b>
<b>6th grade</b>	30	62
<b>7th grade</b>	42	34

Based on the table, which statement is true?

- A. More students preferred chicken than turkey.
- B. More 7th-grade students preferred chicken than turkey.
- C. More 6th-grade students preferred chicken than turkey.

62. A survey was conducted of middle school students to examine the relationship between sleep and the number of carbonated drinks consumed each day. The table shows the results of the data collected.

	<b>More than 4 drinks</b>	<b>Less than or equal to 4 drinks</b>
<b>8 hours or more of sleep</b>	130	186
<b>Less than 8 hours of sleep</b>	306	78

Based on the table, which statement is a valid conclusion?

- A. About half of the students surveyed have less than 4 carbonated drinks per day.
- B. The more carbonated drinks a student consumes, the less sleep the student gets.
- C. The more sleep a student gets, the more carbonated drinks the student consumes.
- D. A student is twice as likely to sleep more than 8 hours if the student consumes more than 4 carbonated drinks.



63. A survey was conducted to determine if different age groups exercise daily. The results are shown in the table.

	18–30 years	31–42 years
<b>Exercise daily</b>	36	40
<b>Do not exercise daily</b>	28	32

Based on the table, which statement is true?

- A. About 56% of those surveyed exercise daily.
  - B. Over 50% of those surveyed do not exercise daily.
  - C. Less people in the 31–42 age group exercise daily than those in the 18–30 age group.
  - D. More people in the 18–30 age group do not exercise daily than those in the 31–42 age group.
64. Cho surveyed 20 classmates to find out how much time they spent studying for their math final exam. He also asked them how much time they used to complete the exam. The data table below shows the results of Cho’s survey.

<b>Time Spent Studying for Exam (in minutes)</b>	<b>Time Used to Complete Exam (in minutes)</b>				
	1-30	31-60	61-90	91-120	Total
1-30	0	0	3	3	6
31-60	1	5	1	0	7
61-90	2	5	0	0	7
Total	3	10	4	3	20

Based on the information in Cho’s data table, which statement must be true?

- A. Students who studied for more than an hour took less than 1 hour to complete the exam.
- B. Students who studied for less than 1 hour took more than an hour to complete the exam.
- C. Most students took more than an hour to complete the exam.
- D. Most students studied for more than an hour.

65. A survey was done at a school to determine how long boys and girls studied for a test. The results are shown in the table below.

	<b>Boys</b>	<b>Girls</b>
<b>30 Minutes Or More</b>	100	88
<b>Less Than 30 Minutes</b>	88	44

Based on the table, which statement is true?

- A. Twice as many Girls as Boys study 30 minutes or more.
  - B. Twice as many Girls as Boys study less than 30 minutes.
  - C. Twice as many Boys as Girls study 30 minutes or more.
  - D. Twice as many Boys as Girls study less than 30 minutes.
66. A survey was conducted to determine the type of milk that students in 6th and 7th grades prefer. The results are shown in the table.

	<b>Regular Milk</b>	<b>Chocolate Milk</b>	<b>Strawberry Milk</b>
<b>6th Grade</b>	43	34	41
<b>7th Grade</b>	35	42	38

Based on the table, which statement is true?

- A. More students prefer drinking regular milk than strawberry milk.
- B. More students prefer drinking regular milk than chocolate milk.
- C. More students prefer drinking chocolate milk than regular milk.
- D. More students prefer drinking chocolate milk than strawberry milk.

67. A school survey was given to 249 students. The results of two of the survey questions are shown in the table.

**School Survey**

	In Favor Of Changing The School Mascot	Against Changing The School Mascot	Total
Interested In Joining The Swim Team	15	33	48
Not Interested In Joining The Swim Team	51	150	201
Total	66	183	249

What is the relative frequency of being in favor of changing the school mascot and interested in joining the swim team?

- A.  $\frac{8}{11}$
- B.  $\frac{5}{16}$
- C.  $\frac{5}{22}$
- D.  $\frac{5}{83}$

68. Several students were asked if they liked or disliked broccoli. Their responses are in the table below.

	Liked broccoli	Disliked broccoli
Males	34	38
Females	23	35

Based on the table, which statement is true?

- A. About 47% of those surveyed are male and liked broccoli.
- B. About 18% of those surveyed are female and liked broccoli.
- C. About 40% of those surveyed are male and disliked broccoli.
- D. About 35% of those surveyed are female and disliked broccoli.

69. Mike asked 80 students at his school which sport they liked best. The students' responses are shown in the table below.

	Football	Basketball	Tennis
Boys	18	15	10
Girls	10	12	15

What percentage of the students chose football?

- A. 28%
- B. 35%
- C. 54%

70. Albert surveyed the people at a local ice cream shop on whether they prefer chocolate or vanilla as a flavor of ice cream. The table below shows the result of Albert's survey.

	Chocolate	Vanilla
Male	24	10
Female	12	26

Which conclusion is **true**?

- A. Most males and females prefer vanilla ice cream more than chocolate ice cream.
  - B. Both males and females prefer chocolate and vanilla ice cream equally.
  - C. Males prefer chocolate ice cream more than vanilla ice cream.
  - D. Females prefer chocolate ice cream more than males.
71. A total of 130 seventh and eighth grade girls were asked whether they preferred to read fiction or poetry. The results of the survey are shown in the table below.

	Fiction	Poetry	Total
Seventh Grade Girls	46	19	65
Eighth Grade Girls	33	32	65
Total	79	51	130

What is the relative frequency of girls who prefer poetry?

- A.  $\frac{19}{51}$
- B.  $\frac{51}{130}$
- C.  $\frac{65}{130}$
- D.  $\frac{32}{51}$

72. A car dealership service manager collected data on the ages of cars brought in for service and the ages of the owners. The table lists the relative frequencies of the data collected.

Age of Cars Relative to Age of Owners

	Group 1 Owners (Under 40 years)	Group 2 Owners (40 years and older)	Total (Groups 1 and 2)
Newer Cars (0–7 years)	0.50	0.34	0.42
Older Cars (8 or more years)	0.50	0.66	0.58
Total Cars	1.00	1.00	1.00

Based on the data, which statement must be true?

- A. About  $\frac{2}{3}$  of the Group 2 owners had older cars.
- B. Sixteen more Group 1 owners had newer cars than Group 2 owners.
- C. Exactly twice as many Group 2 owners had older cars than newer cars.
- D. There were more Group 1 and Group 2 owners with newer cars than older cars.
73. A group of students were asked if they play a musical instrument and how many hours they spend on average doing homework per week. The table below shows the results.

	Study 5 Hours or Less	Study More Than 5 Hours	Total
Do Not Play An Instrument	10	33	43
Do Play An Instrument	27	130	157
Total	37	163	200

Which association is justified by the results in the table?

- A. Students who play an instrument tend to study 5 hours or less.
- B. There are more students who do not play an instrument than students who study more than 5 hours per week.
- C. Students who study more than 5 hours per week tend to play an instrument.
- D. There are more students who study 5 hours or less per week than students who play an instrument.

74. Jackie created the table below to compare the number of matches in which she scored or did not score a goal in both the fall and spring season.

	Fall Season	Spring Season
Scored a Goal	8	21
Did Not Score	16	30

In about what percent of games in the fall did Jackie score a goal?

- A. 33%
- B. 40%
- C. 50%
- D. 67%

75. Students in seventh and eighth grade were asked whether they normally buy their lunch at school, bring their lunch to school, or sometimes buy and sometimes bring their lunch. The results of this survey are in the table.

	Buy Lunch Only	Bring Lunch Only	Buy and Bring Lunch
Seventh Grade	15	10	5
Eighth Grade	7	19	3

Based on the table, which statement is true?

- A. Most students buy their lunch only.
- B. Less than 10% of the students buy and bring lunch.
- C. One-third of the students buy their lunch only.
- D. About half of the students bring their lunch only.

76. The percentages of tips left by customers at a certain restaurant during one week are recorded in the table below.

Restaurant Tips

		Percentage of Tip		
		Under 15%	15% to 20%	Over 20%
Number of Customers	Breakfast	8	10	2
	Lunch	25	45	10
	Dinner	23	39	38
	Late Night	16	8	16

Based on the data, when are customers most likely to leave a tip of 15% or more?

- A. Breakfast
- B. Lunch
- C. Dinner
- D. Late Night

77. Students in 7th and 8th grade were asked their favorite sport. The results of this survey are shown in the table.

	Baseball	Soccer	Basketball	Football
7th Grade	12	14	8	25
8th Grade	8	12	6	15

Based on the table, which statement is true?

- A. Over half of the 7th grade students preferred football.
- B. More students preferred basketball than baseball.
- C. About 50% of each grade level preferred soccer.
- D. Over a third of the 8th graders preferred football.



78. Ms. Cavazos randomly surveyed 100 people on the type of vehicle they drive. The results are shown in the frequency table below.

**Vehicle Survey**

Age	Sedans	Vans	SUVs	Trucks	Total
21–30	5	1	8	11	25
31–40	12	1	2	4	19
41–50	11	3	10	4	28
Over 50	12	4	9	3	28
<b>Total</b>	<b>40</b>	<b>9</b>	<b>29</b>	<b>22</b>	<b>100</b>

Based on the data, which statement is true?

- A. The lowest percentage of type of vehicle driven overall is trucks.
  - B. More people aged 41–50 drive sedans and vans than drive SUVs and trucks.
  - C. A greater percentage of people aged 41–50 drive trucks than people aged 31–40.
  - D. The same number of people aged 21–30 drive trucks as all other age groups combined.
79. The table shows the relative frequency of students enrolled at North High School.

**Student Enrollment**

	Boys	Girls	Total
<b>Grade 9</b>	0.32	0.33	0.32
<b>Grade 10</b>	0.28	0.25	0.26
<b>Grade 11</b>	0.22	0.23	0.23
<b>Grade 12</b>	0.18	0.19	0.19
<b>Total</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>

Based on the data, which statement must be true?

- A. There are 3 more boys in grade 10 than girls.
- B. Exactly half of the boys are in grades 11 and 12.
- C. The percentage of students decreased from grade 9 to grade 12.
- D. The number of girls is greater in each grade than the number of boys.

80. Students at a school were surveyed to find out if they do homework or other activities when they first get home from school. The results of the survey are in the table below.

	<b>Other Activities</b>	<b>Homework</b>
<b>6th Grade</b>	59	102
<b>7th Grade</b>	80	114
<b>8th Grade</b>	108	76

Which statement below is true?

- A. More students in 6th grade do homework first than students in 7th grade.
- B. More students in 7th grade do other activities first than students in 8th grade.
- C. More students in 6th and 7th grade do homework first than students in 8th grade.
- D. More students do other activities first than students who do homework first.