

**Poorna Foundation**



6<sup>th</sup> Grade Math Summer  
Packet

Poorna Foundation

1. Dale used these steps to form a number pattern.
  1. The first term is 3.
  2. The second term is 5.
  3. Each term after the second is the sum of the two terms just before it.

The first five terms in Dale's pattern are the following.

3, 5, 8, 13, 21, ...
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What are the next 3 terms?

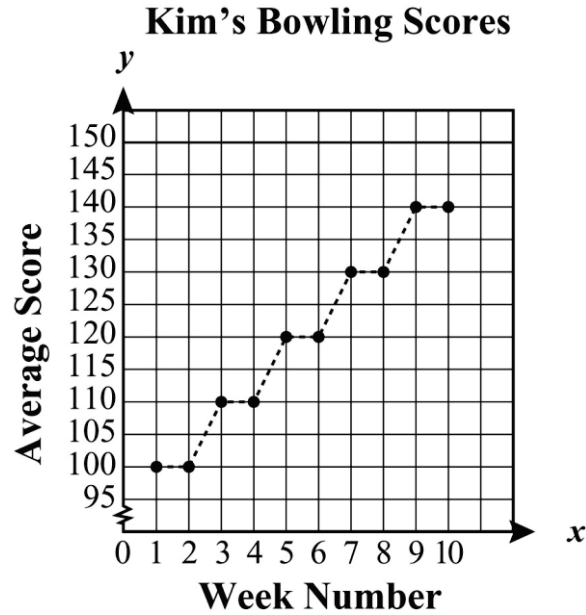
- A 27, 34, 42
  - B 29, 37, 45
  - C 34, 55, 89
  - D 34, 55, 99
2. Mrs. Johnson asked her 6th-grade students to form a number pattern using these rules.

- |   |
|---|
| <ol style="list-style-type: none"><li>1) Use the number 1 as the first term.</li><li>2) To find any other term, double the previous term and add 2.</li></ol> |
|---|

The first two numbers in the pattern are 1 and 4. What is the 4th number in the pattern?

- A 20
- B 22
- C 44
- D 46

3. The graph below shows that Kim's mean (average) bowling scores have formed a pattern for the last 10 weeks. Her mean has stayed the same for two weeks, and then increased by the same amount the next week.



If the pattern continues for the next two weeks, what will Kim's mean score be in week 12?

- A 150
- B 155
- C 160
- D 165

4. What is the value of the following expression when  $p = 9$ ?

$6p + 5$

- A 49
- B 54
- C 59
- D 68

5. If  $x = 3$ , what is the value of the following expression?

$$3x^2 + 2$$

- A 17  
B 20  
C 29  
D 83
6. If  $X = 6$  what is the value of the expression below?

$$(2 + X)^2$$

- A 8  
B 12  
C 16  
D 64
7. What is the value of the following expression when  $b = 5$ ?

$$b + (b^2 \cdot 3) - 5$$

- A 75  
B 80  
C 85  
D 90

Objective 2.1

8. Chuck cut an entire length of rope into 28 pieces,

each  $1\frac{1}{2}$  feet (ft) long. What was the length of the

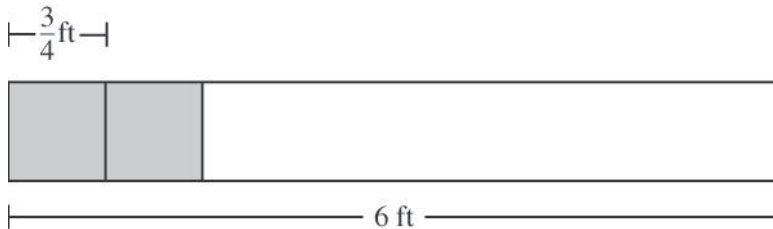
rope before Chuck cut it?

- A 14 ft  
B 21 ft  
C 32 ft  
D 42 ft

9. One winter in Enrique's home state, it snowed 39 inches in  $6\frac{1}{2}$  days. What is that rate in inches of snow per day?

- A 4 inches per day
- B 5 inches per day
- C 6 inches per day
- D 7 inches per day

10. Mrs. Johnson plans to cut a 6 foot (ft) board into pieces that are  $\frac{3}{4}$  ft long, as shown in the diagram below.



How many pieces can she get from this board?

- A 9 pieces
- B 8 pieces
- C 6 pieces
- D 4 pieces

11. The large square below was divided into smaller squares of equal size.

6		7						7	
			4		2				
	3					7			6
		7			5				
				1				7	
	7						4		4
			6		7				
	7								3
		4		7		6			2
5			7				3		

What fractional part of the large square is represented by the number of small squares that contain the number 7?

- A  $\frac{10}{90}$
- B  $\frac{9}{10}$
- C  $\frac{7}{100}$
- D  $\frac{1}{10}$

12. The table shows the number of pies eaten by the top four contestants in a middle school pie-eating contest.

Contestant Number	Number of Pies Eaten
Ali	$5\frac{1}{2}$
Brett	$5\frac{1}{4}$
Lois	$5\frac{2}{3}$
Zeke	$5\frac{3}{8}$

Which of the following lists the number of pies eaten in order from least to greatest?

A  $5\frac{1}{4}, 5\frac{1}{2}, 5\frac{3}{8}, 5\frac{2}{3}$

B  $5\frac{2}{3}, 5\frac{1}{2}, 5\frac{3}{8}, 5\frac{1}{4}$

C  $5\frac{2}{3}, 5\frac{1}{4}, 5\frac{3}{8}, 5\frac{1}{2}$

D  $5\frac{1}{4}, 5\frac{3}{8}, 5\frac{1}{2}, 5\frac{2}{3}$

13. Fractional parts of the rectangles below have been shaded.

Figure 1



Figure 2



Figure 3



Figure 4



Which rectangle best represents the decimal 0.583?

- A Figure 1
- B Figure 2
- C Figure 3
- D Figure 4

14. Sandra bought four bags of nails for a carpentry project. The weights of the bags, in pounds (lb), are shown below.

$$2\frac{5}{6} \text{ lb}, 1\frac{1}{4} \text{ lb}, 2\frac{1}{8} \text{ lb}, 1\frac{3}{4} \text{ lb}$$

Which is closest to the total weight of the four bags of nails?

- A 10 lb  
B 8 lb  
C 6 lb  
D 4 lb
15. Justin prepared 987 ads for mailing. To prepare each ad, it took him about 7 seconds (sec) to put each ad into an envelope and 8 seconds to seal, label, and stamp each envelope. Which is closest to the total amount of time it took Justin to prepare the ads?
- A 1,200 sec  
B 7,000 sec  
C 8,500 sec  
D 15,000 sec
16. Nikki and four friends had lunch at their favorite restaurant. The total bill was \$29.00, and they wanted to leave a 15% tip. Which amount of money is closest to the 15% tip?
- A \$3.00  
B \$3.50  
C \$4.00  
D \$4.50

17. What is the value of the expression shown below?

$$4 + 2(1 + 3^2) - 1$$

- A 17
- B 19
- C 23
- D 35

18. What is the value of the expression shown below?

$$4^2 + (6 - 5)^2 \div (4 + 4) - 7$$

- A  $1\frac{1}{4}$
- B  $9\frac{1}{8}$
- C 17
- D 25

19. Which choice gives the correct order of operations to evaluate the expression below?

$$10 + (8 - 3) \div 5 \cdot 2$$

- A +, -,  $\cdot$ ,  $\div$
- B  $\cdot$ ,  $\div$ , +, -
- C -,  $\cdot$ ,  $\div$ , +
- D -,  $\div$ ,  $\cdot$ , +

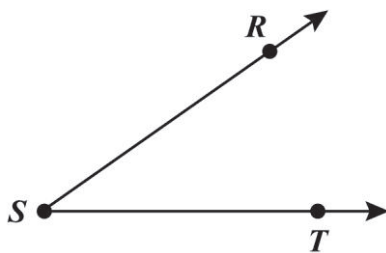
20. According to the correct order of operations, which of these could be performed first to simplify the following expression?

$$3^2 + 24 \div 6 \cdot 2 + (10 + 6^2)$$

- A  $3^2 + 24$
- B  $6 \cdot 2$
- C  $6^2$
- D  $10 + 6$

Objective 3.1a

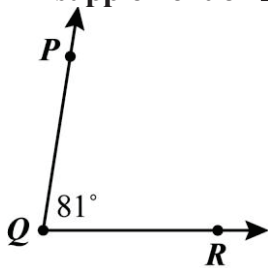
21. Which is closest to the measure of  $\angle RST$ ?



- A  $150^\circ$
- B  $120^\circ$
- C  $70^\circ$
- D  $35^\circ$

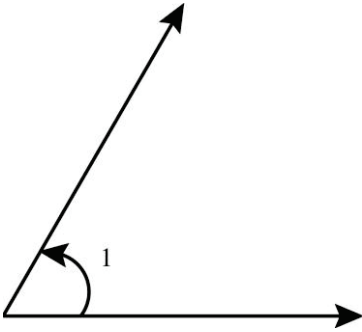
Objective 3.1b

22. What is the measure of the angle that is the supplement of  $\angle PQR$ ?



- A  $9^\circ$
- B  $90^\circ$
- C  $99^\circ$
- D  $180^\circ$

23. Angle 1 has a measure of  $60^\circ$ .

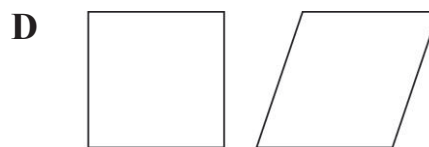
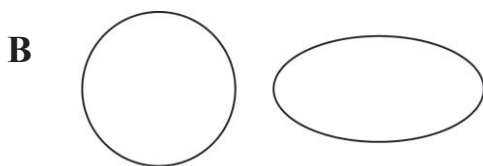
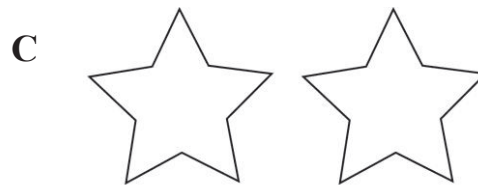
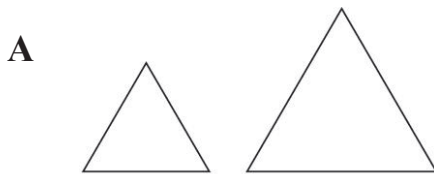


What is the measure of the angle that is the complement of angle 1?

- A  $120^\circ$
  - B  $90^\circ$
  - C  $40^\circ$
  - D  $30^\circ$
24. The measure of angle B is  $118^\circ$ , and angle B is the supplement of angle C. Which statement below is true about angle B and angle C?
- A They are both obtuse angles.
  - B The sum of their measures is  $90^\circ$ .
  - C The sum of their measures equals  $360^\circ$ .
  - D One angle is acute and one angle is obtuse.

Objective 3.2

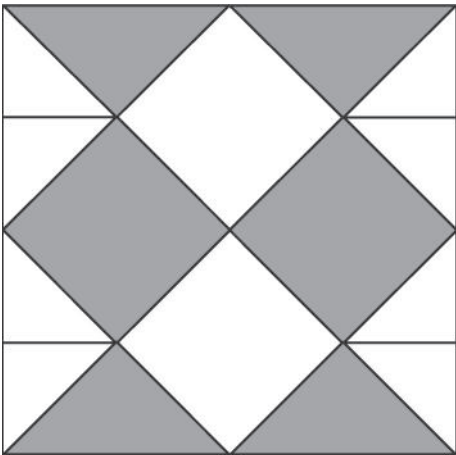
25. Which shows a pair of shapes that appear to be similar but not congruent?



26. Which describes an example of congruent shapes?

- A The lengths of the sides of 2 triangles are equal.
- B The edges of one square are twice as long as the edges of a second square.
- C The height of one ice-cream cone is 4 inches, and the height of another ice-cream cone is 6 inches.
- D The length of a packing box is  $\frac{1}{3}$  the length of a second packing box.

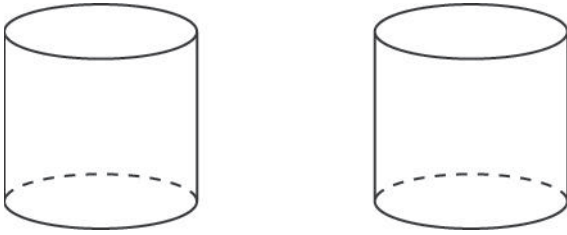
27. The window design below is made of triangles and quadrilaterals.



Which statement best describes the shapes in the window design?

- A All the shapes appear to be similar.
- B All the triangles appear to be congruent and similar.
- C All the quadrilaterals appear to be congruent.
- D All the triangles appear to be congruent but not similar.

28. Albert correctly stated that these two figures are congruent.



Which statement best describes what it means for these figures to be congruent?

- A Both figures have the same shape but are different sizes.
- B Both figures have the same height but a different radius.
- C Both figures have the same radius but a different height.
- D Both figures have the same shape and same size.

Objective 4.2

29. Ted calculated the area of the top surface of his workbench to be 4320 square inches. What is 4320 square inches converted to square feet (sq ft)?

- A 30 sq ft
- B 40 sq ft
- C 360 sq ft
- D 432 sq ft

30. Don bought a melon that weighed  $10\frac{1}{2}$  pounds (lb). What was the weight of the melon in pounds and ounces (oz)?

- A 10 lb 2 oz
- B 10 lb 5 oz
- C 10 lb 8 oz
- D 10 lb 12 oz

31. Julie likes to in-line skate at River Park, which has a sidewalk that is 6.2 kilometers in length. How many meters (m) long is the sidewalk?
- A 62 m
  - B 620 m
  - C 6,200 m
  - D 62,000 m
32. Rosie weighed 7 pounds (lb) 11 ounces (oz) when she was born. Linda weighed 8 lb 10 oz when she was born. What is the total weight of these girls when they were born?
- A 15 lb 5 oz
  - B 16 lb 5 oz
  - C 16 lb 11 oz
  - D 17 lb 1 oz
33. A storage room in the shape of a square measures 13 feet on each side. How many yards (yd) are equivalent to the perimeter of this room?
- A  $4\frac{1}{3}$  yd
  - B  $17\frac{1}{3}$  yd
  - C 39 yd
  - D 52 yd

**Objective 4.3**

34. Patrick is an 11-year-old boy. Which is the most reasonable length for his footprint?
- A 0.25 meter
  - B 2.5 centimeters
  - C 25 decimeters
  - D 2,500 millimeters

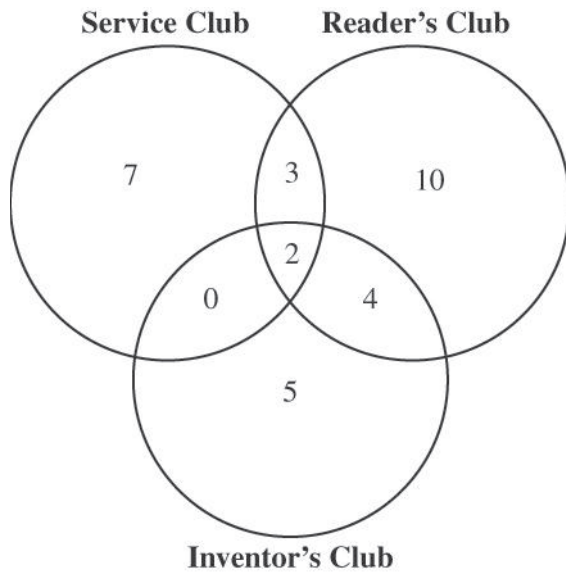
**35. Monica is 11 years of age. Which is closest to her age in days?**

- A 120 days**
- B 2,000 days**
- C 2,400 days**
- D 4,000 days**

**36. Todd's dog eats 15 ounces of dry dog food every day. Which is a reasonable number of days it will take Todd's dog to eat 40 pounds of dog food?**

- A 25 days**
- B 40 days**
- C 50 days**
- D 65 days**

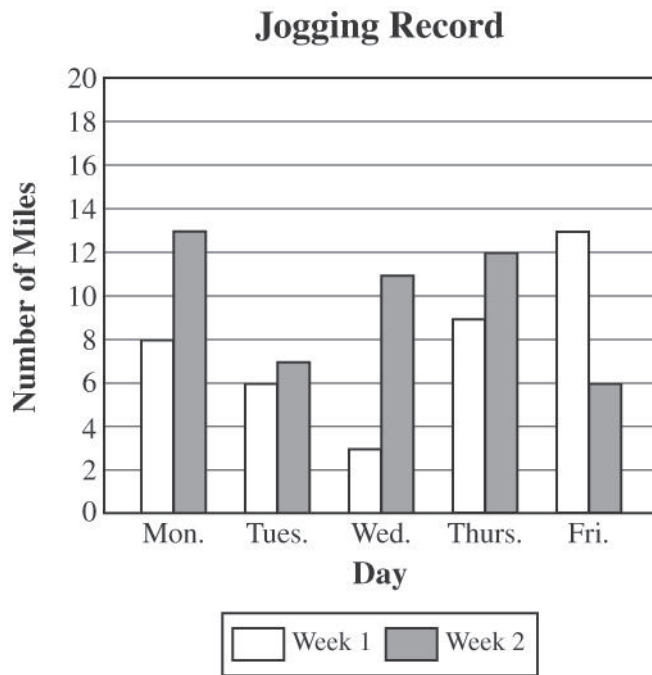
37. The Venn diagram below shows the numbers of sixth-grade students who participate in different after-school activities.



What is the total number of students who participate in the Service Club or the Inventor's club?

- A 12 students
- B 19 students
- C 21 students
- D 23 students

38. The graph below shows the number of miles Johnny jogged each day for two weeks.







Which day had the greatest difference in the number of miles Johnny jogged between week 1 and week 2?

- A Monday
- B Wednesday
- C Thursday
- D Friday

39. Phil surveyed all the students in his class to find out their favorite flavors of ice cream. The results of the survey are shown in the table below.

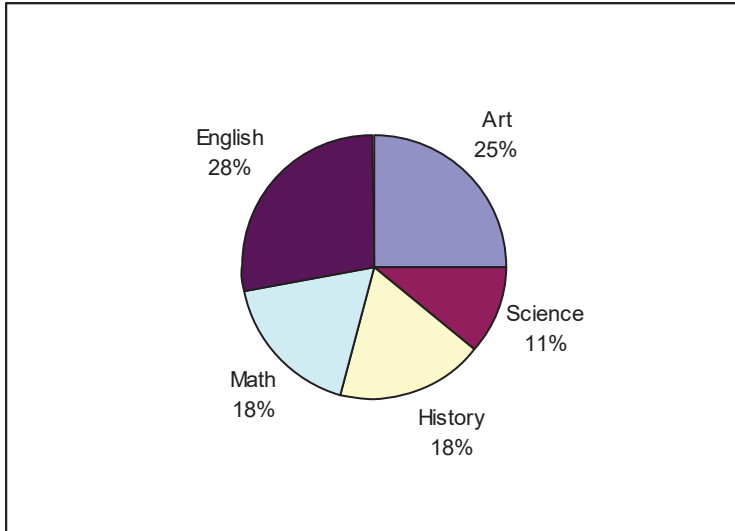
**Favorite Flavor of Ice Cream**

Flavor	Number of Students
Vanilla	
Chocolate	
Strawberry	
Other	

Which statement is true?

- A Flavors other than vanilla, chocolate, and strawberry are preferred by  $\frac{1}{6}$  of the students.
- B Strawberry is the third most favorite flavor among the students.
- C Vanilla is the favorite flavor of exactly  $\frac{1}{4}$  of all the students.
- D Chocolate is the favorite flavor of 50% of the students.

40. Zach surveyed 28 students in his class to find out which subjects are their favorites. He made this graph to show the results.



How many students chose art as their favorite subject?

- A 7 students
- B 14 students
- C 21 students
- D 25 students

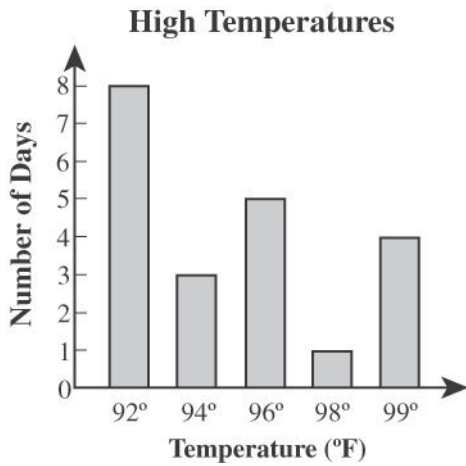
41. The table below shows the data collected by Albert's science class about high temperatures on school days last September.

**High Temperatures**

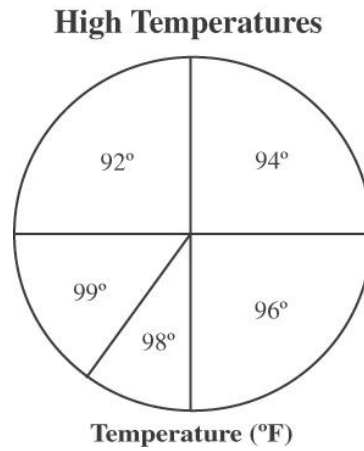
Temperature (°F)	Number of Days
92	8
94	3
96	5
98	1
99	4

Which graph best shows the data collected by Albert's class?

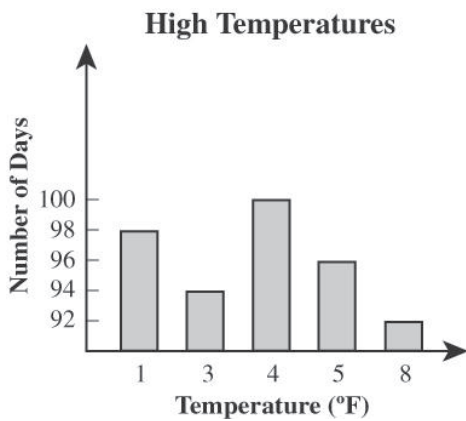
**A**



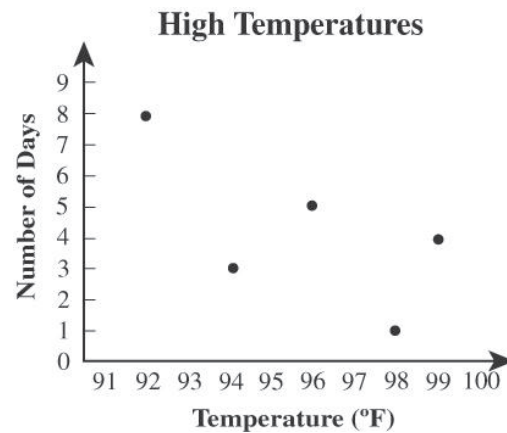
**C**



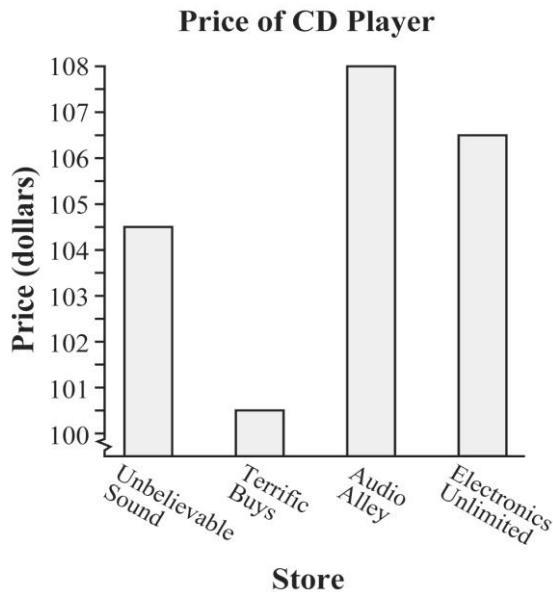
**B**



**D**



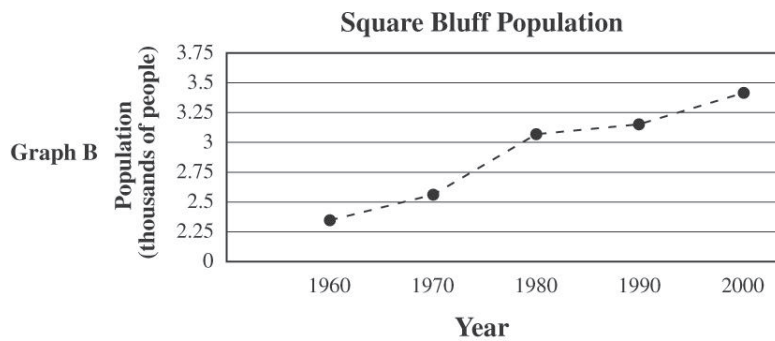
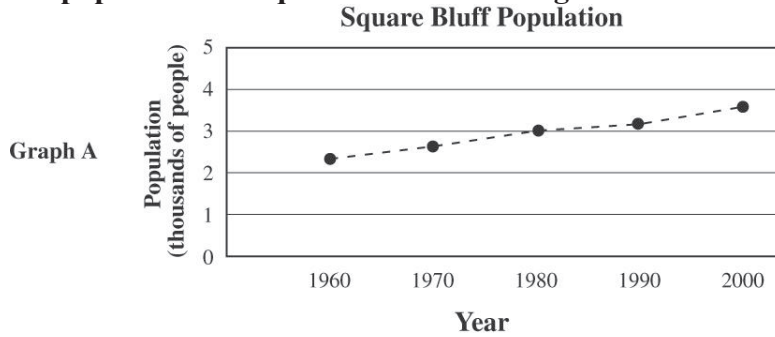
42. The bar graph below shows the prices of the same CD player at four different stores. Jim is surprised to see how much less expensive the price is at Terrific Buys.



How might the graph mislead Jim about the price of the CD player at Terrific Buys compared to the price at the other stores?

- A The names of the four stores should be on the *y*-axis and the prices should be on the *x*-axis.
- B The *y*-axis has a break in the scale between \$0 and \$100.
- C The scale increments are only \$0.50.
- D The bars on the graph are not in order from tallest to shortest.

43. The two graphs below were both made from the same data. They both show how the population of Square Bluff has changed over time.



What part of Graph A makes the changes in population over time appear smaller?

- A smaller scale increments on the  $y$ -axis
- B smaller scale increments on the  $x$ -axis
- C larger scale increments on the  $y$ -axis
- D larger scale increments on the  $x$ -axis

44. Dana attends a 90-minute dance class one day each week. Last week, she practiced the following dances during class.

- 30 minutes on ballet
- 40 minutes on tap
- 20 minutes on jazz

Which display of data is most appropriate to show how Dana spent her practice time in dance class last week?

- A line plot
- B circle graph
- C line graph
- D tally chart

45. The table shows the English test scores for 6 students.

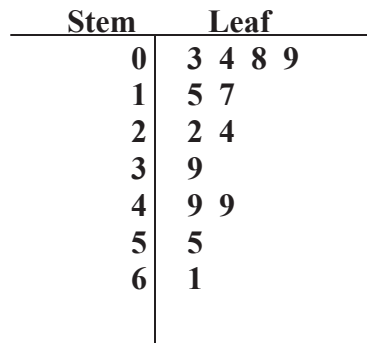
English Test Grades

Student	Grade
1	78
2	92
3	80
4	95
5	85
6	70

What is the median of the test scores shown in the table?

- A 82.5
- B 83.3
- C 85.2
- D 87.5

46. The stem-and-leaf plot shows the ages of Mike's family members.



Key: 2|4 = 24

What is the median age of Mike's family members?

- A 17
- B 22
- C 24
- D 39

47. What is the mode for the following set of data?

2.4, 1.3, 3.9, 3.1, 4.2, 6.4, 1.4, 4.6, 2.9, 1.5, 3.6, 6.3, 1.3, 5.1
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- A 4.6
- B 2.4
- C 1.4
- D 1.3

48. Which statement best describes the median of the data in the list below?

3, 5, 8, 9, 2, 2, 13
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- A The median is a composite number and is also a factor of 12.
- B The median is a composite number and is also a factor of 18.
- C The median is a prime number and is also a factor of 15.
- D The median is a prime number and is also a factor of 8.

## Answer Sheet

- |       |       |
|-------|-------|
| 1. C  | 25. A |
| 2. B  | 26. A |
| 3. A  | 27. C |
| 4. C  | 28. D |
| 5. C  | 29. A |
| 6. D  | 30. C |
| 7. A  | 31. C |
| 8. D  | 32. B |
| 9. C  | 33. B |
| 10. B | 34. A |
| 11. D | 35. D |
| 12. D | 36. B |
| 13. B | 37. C |
| 14. B | 38. B |
| 15. D | 39. A |
| 16. D | 40. A |
| 17. C | 41. A |
| 18. B | 42. B |
| 19. D | 43. C |
| 20. C | 44. B |
| 21. D | 45. A |
| 22. C | 46. B |
| 23. D | 47. D |
| 24. D | 48. C |