1. There were $14\frac{1}{4}$ cups of apple juice in a container. Each day, Elise drank $1\frac{1}{2}$ cups of apple juice. Today, there is $\frac{3}{4}$ cup of apple juice left.

Derek said that Elise drank apple juice on nine days. Do you agree with Derek? Use words and numbers to explain your answer.
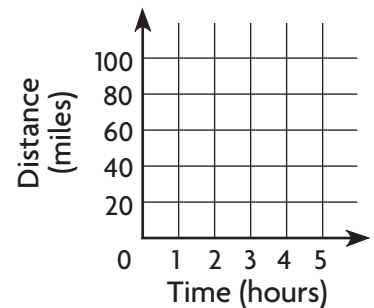
_____

_____

_____

2. Use exponents to write the expression.

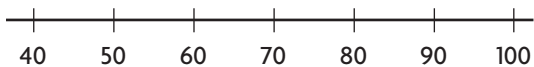$2 \times 2 \times 2 \times 4 \times 4$

$2^{\boxed{}} \times 4^{\boxed{}}$

3. The Tuckers drive at a rate of 20 miles per hour through the mountains. Use the ordered pairs to graph the distance traveled over time.

Distance (miles)	20	40	60	80	100
Time (hours)	1	2	3	4	5

4. Ms. Wilson gave a quiz to her science class. The students' scores are listed in the table. Make a dot plot of the data.

Science Test Scores				
90	90	50	70	70
80	90	50	70	60
90	70	60	80	100
70	50	80	90	90
80	70	80	100	70

GO ON

5. The data set shows the scores of three players for a board game.

Board Game Scores			
Player A	90	90	90
Player B	110	100	90
Player C	95	100	95

For numbers 5a–5b, choose Yes or No to indicate whether the statement is correct.

5a. The mean absolute deviation of Player B is 0.   ○ Yes   ○ No

5b. The mean absolute deviation of Player B is greater than the mean absolute deviation of Player C.   ○ Yes   ○ No

6. The table shows the earnings and the number of hours worked for three employees. Complete the table by finding the missing values. Which employee earned the least per hour? Explain.

Employee	Total Earned (in dollars)	Number of Hours Worked	Earnings per Hour (in dollars)
1	$34.02		$9.72
2	$42.75	4.5	
3	$52.65		$9.75

_____

_____

7. For numbers 7a–7b, choose Yes or No to indicate whether the situation can be represented by a negative number.

7a. Lisa's golf score was 2 strokes below par.   ○ Yes   ○ No

7b. The temperature rose to 85°F.   ○ Yes   ○ No

8. Select the expressions that are equivalent to $6(x - 4)$. Mark all that apply.

- (A) $6x - 10$
- (B) $x - 10$
- (C) $6x - 24$
- (D) $x - 24$

GO ON

9. The number of cups of hot chocolate sold during lunch time at five different snack carts are 8, 16, 18, 19, and 24. The mean number of cups of hot chocolate sold is 17. Identify the outlier and describe how the mean and median for this data set are affected by it.

_____

_____

10. Identify the quadrant where each point is located. Write each point in the correct box.

(7, 6)   ($^-$5, 9)   (8, 4)

($^-$3, $^-$1)   (6, $^-$2)   (4, $^-$2)

Quadrant I	Quadrant II	Quadrant III	Quadrant IV

11. Melinda rides her bike 18 miles in 2 hours at a constant speed. Select the answers below that are equivalent ratios to the speed she rides. Mark all that apply.

A 27 miles in 4 hours   **D** 27 miles in 3 hours

B 9 miles in 1 hour   **E** 36 miles in 4 hours

C 36 miles in 2 hours

12. Select the pairs of points that have a distance of 2 units between them. Mark all that apply.

A ($^-$4, 4) and ($^-$4, 2)   **C** ($^-$3, 3) and ($^-$3, 1)

B (1, 1) and (1, $^-$3)   **D** (1, $^-$6) and (1, $^-$10)

GO ON

13. Circle $<$, $>$, or $=$.

13a. $^-12$ | $<$ $>$ $=$ | $^-9$ 13c. $^-1.5$ | $<$ $>$ $=$ | $^-2$

13b. $^-8$ | $<$ $>$ $=$ | $^-10$ 13d. $^-0.6$ | $<$ $>$ $=$ | $^-1.6$

14. Match the inequality to the word sentence it represents.

$a <$ | 80 | •   • | No more than 80 passengers are allowed to ride on the bus at the same time.

$b \leq$ | 80 | •   • | Mikayla saved less than \$80.

$c >$ | 80 | •   • | Ava spent more than \$80 on concert tickets.

15. Identify the expression that can be used to express the calculation *subtract 17 from q.*

Ⓐ $q - 17$ Ⓒ $q + 17$

Ⓑ $17q$ Ⓓ $17q + 17$

16. For numbers 16a–16b, choose Yes or No to indicate whether the question is a statistical question.

16a. What was the fastest speed reached by the winner of the race?   ○ Yes   ○ No

16b. How many more seconds did it take the last car to cross the finish line than the first car in each of the 3 races?   ○ Yes   ○ No

GO ON

17. Maria needs to save at least $130 to buy a new bike. The inequality $x \geq \$130$ represents the amount of money she needs to save. Which of the following are solutions to this inequality? Select all that apply.

(A) $135   (C) $125

(B) $130   (D) $120

18. Jordan surveyed a group of randomly selected smartphone users and asked them how many applications they have downloaded onto their phones. The dot plot shows the results of Jordan's survey. Select the statements that describe patterns in the data. Mark all that apply.

Number of Applications
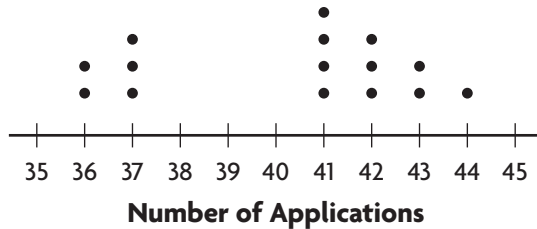
(A) The modes are 37 and 42.

(B) There is a gap from 38 to 40.

(C) There is a cluster from 41 to 44.

(D) There is a cluster from 35 to 36.

19. Write the values in order from greatest to least.

| $|7|$ | $|^-8|$ | $|^-11|$ | $|4|$ |

20. Javier bought *x* pounds of olives at $4 per pound and *y* pounds feta cheese at $2 per pound. Write an algebraic expression for the cost of Javier's purchase.

_____

21. A teacher surveys his students to find out how much time the students spent using social media over the weekend.

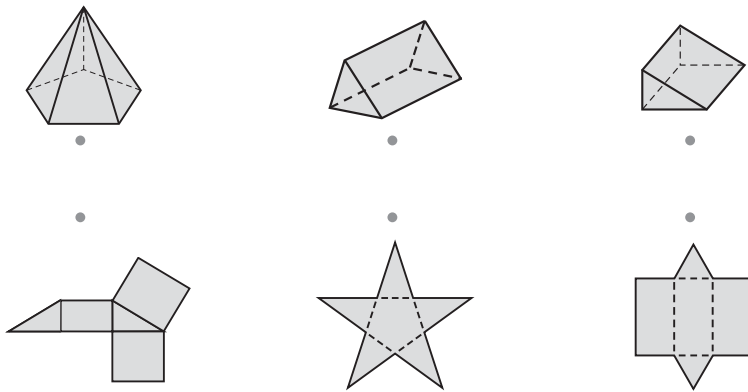He uses | hours / minutes / seconds | as the unit of measure.

Time Spent Online (hours)			
2.5	2	5	3.5
1.5	3	3	4.5
3.5	4	4.5	5

He made | 11 / 12 / 13 | observations.

**22.** Draw a line to match each solid figure with its net.

23. A rectangular prism measures 6 units long, 3 units wide, and 2 units high. Select the expressions that show the volume of the rectangular prism. Mark all that apply.

(A) 6(6 units + 3 units + 2 units)

(C) 6 units × 3 units × 2 units

(B) 2(6 units × 3 units × 2 units)
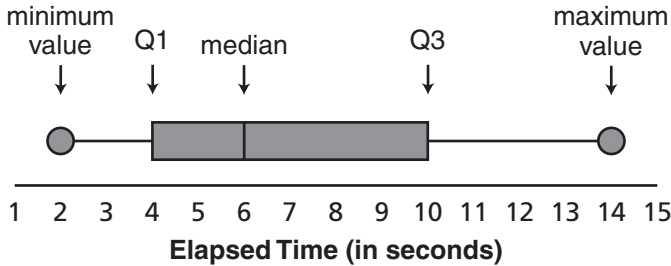
(D) 36 cubic units

GO ON

24. Explain how to graph points A (4, 0), B (4, $^-$3), and C (0, $^-$3) on the coordinate plane. Then, explain how to graph point D, so that $ABCD$ is a rectangle.

25. Name the regular polygon and find its area. Show your work.

4.8 in.

4 in.
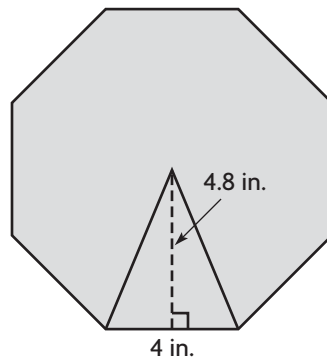
26. A line segment has endpoints (3, 14) and (3, 22). Which of the following statements is true?

(A) The segment has a length of 8 units and is horizontal.

(B) The segment has a length of 8 units and is vertical.

(C) The segment has a length of 18 units and is horizontal.

(D) The segment has a length of 18 units and is vertical.

GO ON

27. Use the box plot to calculate the range and interquartile range for the data displayed.

minimum value | Q1 | median | Q3 | maximum value

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

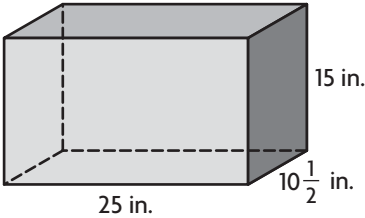**Elapsed Time (in seconds)**

Range: _____

Interquartile range: _____

28. Lisa has a keepsake box that is in the shape of a rectangular prism.

The volume is

$3,937 \frac{1}{2}$ in.³

$2,150 \frac{1}{3}$ in.³

$1,230 \frac{1}{2}$ in.³

15 in.

25 in.

$10\frac{1}{2}$ in.

29. Jamie said $|{}^{-}2|$ equals $|2|$. Is Jamie correct? Draw a number line and use words to support your answer.

GO ON

Cooperstown Bound

Mr. and Mrs. Isaac and their three children take a trip by car to Cooperstown.

1. The Isaacs live m miles from Cooperstown, and they drive 30 miles while they are in the town. Write an algebraic expression using m to show how many miles they drive from the time they leave home until they return. Explain your answer.

2. The total distance the Isaacs travel is 450 miles. Write and solve an equation to find m, the distance from their home to Cooperstown.

3. The Isaacs' car can go 30 miles on 1 gallon of gas. Write and solve an equation to find g, the number of gallons of gas they use driving 450 miles.

GO ON

4. On the interstate highway the Isaacs can drive at a steady
65 miles per hour. Fill in the table to show how far they travel
in 1, 2, and 3 hours.

Time t in hours	Distance d in miles
0	0
1	
2	
3	

5. Make a graph using the numbers in your table, with time
t on the x-axis and distance d on the y-axis.

6. Write an equation to tell how far the Isaacs travel, d, in t hours on the interstate.

Use your equation to figure out how far they go in $1\frac{1}{2}$ hours.

7. The Isaacs have budgeted x dollars per day for each of their 3 days at a hotel, and y dollars per day for food for each of the 3 days. Write two different expressions to give the total for hotel and food. Describe your expressions.

8. One of the highlights of their trip is a visit to the Baseball Hall of Fame. Let $a =$ the cost of an adult ticket for the Hall of Fame. Let $c =$ the cost of a child's ticket. Write an expression using a and c to tell how much it costs for all 5 people in the Isaac family to get tickets for the Hall of Fame. Explain your answer.

The adult tickets cost $19.50 each, and the children's tickets cost $7.00 each. Substitute these values into your expression and evaluate the expression to find the amount they pay for all the tickets.

GO ON

9. The Baseball Hall of Fame opened in 1939. Write and solve an equation to tell *a*, how old the Hall of Fame is. Explain your answer.

10. They also visit the Farmers' Museum. One of the exhibits at the Farmers' Museum is the "Cardiff Giant," a huge carved stone figure that was buried on a farm in New York in the 1860s as a practical joke and money-making scheme. George Hull paid $2,600 to have the figure carved and transported, and then he made $30,000 in a short time from people paying 50¢ each to see the giant. Write and solve an equation to find *n*, how many people came to see the giant during this time.

11. Tickets for the Farmers' Museum are $12 for adults and $6 for children. A ticket for *both* the Farmers' Museum and the Baseball Hall of Fame is *x* dollars for an adult and *y* dollars for a child. Write an expression to show how much the Isaac family can save by buying double tickets for everyone rather than individual tickets. (Also use the information in question 8.) You do not need to simplify the expression.

12. The Isaacs buy some souvenirs for *s* dollars. The sales tax is 8% of the cost, so the total for the souvenirs is $s + 0.08s$. Use the distributive property to write this amount a different way.

STOP