

Directions: Answer the following question(s).

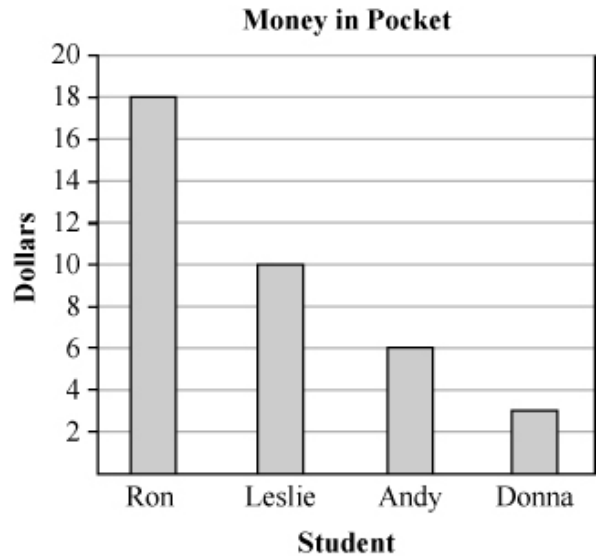
1 Of the 50 states, 23 have a coast that touches the ocean. What is the ratio of states that touch the ocean to states that do NOT touch the ocean?

- A. 1 to 2
- B. 12 to 25
- C. 23 to 27
- D. 23 to 50

2 Pablo is running at a speed of 6 miles per hour, and Victor is jogging at 4 miles per hour. For any time interval, what is the ratio of the distance Pablo travels to the distance Victor travels?

- A. 3:2, because Pablo is traveling  $\frac{3}{2}$  as fast as Victor
- B. 1:2, because Victor is traveling 2 miles per hour slower than Pablo
- C. 2:3, because Pablo is traveling  $\frac{2}{3}$  as fast as Victor
- D. 6:1, because Victor is traveling  $66\frac{2}{3}\%$  slower than Pablo

3 Four classmates compared how much money they had in their pockets.



What is the ratio of the number of dollars in Andy's pocket to the number of dollars in Ron's pocket?

- A. 1 : 6
- B. 1 : 3
- C. 5 : 9
- D. 3 : 1

4 Which situation has a unit rate of \$7?

- A. Trevor spent \$49 on 2 theater tickets.
- B. Sally bought a pack of 5 t-shirts for \$35.
- C. Brandon bought 7 gallons of gas for \$14.
- D. Gina bought nail polish for \$5 and a pack of gum for \$2.

Directions: Answer the following question(s).

- 5 The pairs of values in the table below show a ratio.

$x$	$y$
1	6
2	12
3	18
4	24
5	?

What is the value of  $y$  when  $x = 5$ ?

- A. 28
- B. 30
- C. 32
- D. 34

- 6 Georgia buys a popsicle for herself every Monday. The table shows how much Georgia has spent on popsicles over the last six weeks.

Week	Money Spent
1	
2	\$4
3	
4	\$8
5	\$10
6	

How much does Georgia spend on popsicles each week, and how much does she spend by week 6?

- A. Georgia spends \$4 each week, and she has spent \$14 by week 6.
- B. Georgia spends \$2 each week, and she has spent \$14 by week 6.
- C. Georgia spends \$2 each week, and she has spent \$12 by week 6.
- D. Georgia spends \$4 each week, and she has spent \$12 by week 6.

- 7 Before making invitations, Katrina counted the supplies she bought for her party. She counted 36 water balloons and 81 beads to make bracelets. She then needed to decide how many invitations to make.

What is the largest number of friends she can invite so each person gets the same amount of water balloons and each friend gets the same number of beads?

- A. 6
- B. 7
- C. 9
- D. 10

- 8 Calculate the value of the expression shown.

$$13,140 \div 12$$

- A. 110
- B. 111
- C. 1095
- D. 1212

Directions: Answer the following question(s).

9 A project you are working on as a zoologist is the planning of the new aquarium exhibit in the zoo. Today, you need to calculate the number of small aquariums you will be able to have in the exhibit,  $x$ . You have been told that you may use only one large barrel of water in order to fill all the small aquariums. You

know that one barrel holds a total of  $231\frac{5}{8}$

gallons of water, and each small aquarium

can hold  $27\frac{1}{4}$  gallons of water. In order to

solve for the number of small aquariums you will be able to have, you complete the following steps:

Step 1 – Write the equation:

$$x = 231\frac{5}{8} \div 27\frac{1}{4}$$

Step 2 – Convert mixed numbers to irregular

$$\text{fractions: } x = \frac{1853}{8} \div \frac{109}{4}$$

Step 3 – Change division to multiplication:

$$x = \frac{1853}{8} \times \frac{4}{109}$$

Step 4 – Solve:  $x = \frac{201977}{32}$ ;  $x = 6311.78$ ; I can

fit 6311 small aquariums in the new exhibit.

Explain what mistake you made in your steps. Correct your mistake, and calculate the accurate number of small aquariums you will be able to have in the new exhibit.

Write your answer in the space below.

10 What is the value of  $1,195.83 - 1,008.37$ ?

- A. 187.46
- B. 188.54
- C. 193.54
- D. 197.56

11 An expression is shown.

$$93.23 + 319.88$$

What is the value of the expression?

- A. 403.11
- B. 404.01
- C. 413.11
- D. 414.01

12 An expression is shown.

$$83.31 \times 6.2$$

What is the value of the expression?

- A. 505.422
- B. 506.522
- C. 513.422
- D. 515.522

13 What is the greatest common factor of 48 and 88?

- A. 2
- B. 4
- C. 8
- D. 11

Directions: Answer the following question(s).

- 14 Jay has an online biology quiz due every 5 days and an online math quiz due every 4 days. If both quizzes were due on June 6, when is the next day both quizzes will be due again?

**JUNE**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

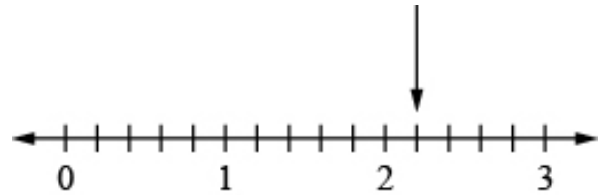
- A. June 13  
 B. June 16  
 C. June 26  
 D. June 29

- 15 Sally has  $\frac{3}{4}$  of yard of ribbon to make bows. She uses  $\frac{1}{8}$  yard of ribbon to make each bow. Does she have enough ribbon to make 7 bows? Show how you know.

Write your answer in the space below.

- 16 Doug's pet gerbil eats  $\frac{1}{8}$  pound of food a day. Doug buys a  $\frac{3}{2}$ -pound bag of food for his pet. How many days will the food last?
- A.  $\frac{3}{4}$  day  
 B. 4 days  
 C. 8 days  
 D. 12 days

- 17 The arrow on the number line below represents which rational number?



- A.  $\frac{2}{3}$   
 B. 2.1  
 C. 2.2  
 D.  $2\frac{1}{4}$

- 18 Ethan has saved \$180 to buy a bicycle which costs \$540. He wants to find how much more he needs to save to buy the bicycle.

Which equation when solved would show Ethan the amount of money he needs to save?

- A.  $180x = 540$   
 B.  $180 + x = 540$   
 C.  $x - 180 = 540$   
 D.  $540 + x = 180$

- 19 How could the statement "12 less than  $x$ " be written?

- A.  $x \div 12$   
 B.  $12 + x$   
 C.  $x - 12$   
 D.  $12 - x$

Directions: Answer the following question(s).

20 Solve the equation for  $y$ .

$$3y = 63$$

- A. 21
- B. 60
- C. 66
- D. 189

21  $9x + 8$

Which word best describes  $8$  in this expression?

- A. Coefficient
- B. Factor
- C. Constant
- D. Variable

22 Would you be happy if you received the following score on a Common Assessment?

$$100 - 50 \div 5 \cdot 10$$

Write your answer in the space below.

23 Lindsay and Diego are arguing over the following problem. Lindsay says that the solution is true, but Diego says that is not. Who is correct?

$$12 \div 3 + 4 - 24 \div 3 \cdot 1$$

$$4 + 4 - 24 \div 3$$

$$4 + 4 - 8$$

$$8 - 8$$

$$0$$

Write your answer in the space below.

24 Mrs. Carver is trying to find out how many lab coats she had initially started the year with.

Twelve of her lab coats were ruined, and she is left with 22. Salman said to use the equation  $c - 12 = 22$ , he said, "I'm looking for a number,  $c$ , that is 12 less than 22, so  $c = 10$ ."

Which statement *best* describes the flaw in Salman's reasoning?

- A. Salman's answer is right, but he should have just subtracted 12 from both sides of the equation.
- B. Salman's answer is wrong, but he explained the equation correctly.
- C. Salman's equation is set up correctly, but his explanation of what it represents is incorrect.
- D. Salman should have subtracted the 22 from the 12 instead of 12 from the 22.

25 Theo needs to sell at least 25 candy bars for a fundraiser. He has already sold 12 candy bars. The inequality below can be used to find the number of candy bars ( $c$ ) that Theo still needs to sell.

$$12 + c \geq 25$$

Which inequality represents the solution set for this problem?

- A.  $c \geq 13$
- B.  $c \leq 13$
- C.  $c \geq 37$
- D.  $c \leq 37$

26 Which expression has only one term?

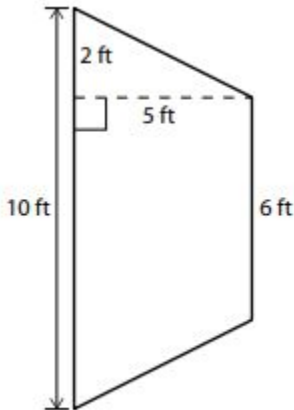
- A. 2
- B.  $x + 1$
- C.  $2x^2 + 2$
- D.  $2 - (x - 1)$

Directions: Answer the following question(s).

- 27 Which expression is equivalent to  $8(x + 6)$ ?
- A.  $8x + 48$
  - B.  $8x + 14$
  - C.  $42x$
  - D.  $42$

- 28 Which expression is equivalent to  $3 + 6x + 9$ ?
- A.  $18$
  - B.  $18x$
  - C.  $6x + 12$
  - D.  $9x + 9$

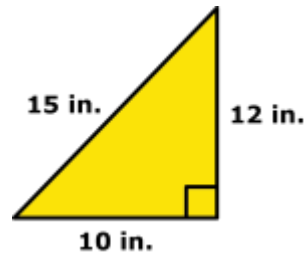
- 29 Ms. Nichols has a garden shaped like the trapezoid shown below. What is the area of the trapezoid and explain how you determined the area of the trapezoid.



Write your answer in the space below.

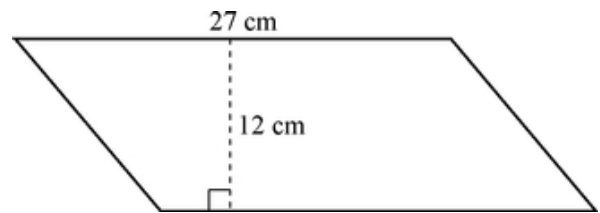
- 30 To help with packing, Ana needs to find the volume of her suitcase to determine how much she could pack. Her suitcase is a rectangular prism, with dimensions of 19 inches tall, 13 inches wide, and  $7\frac{1}{2}$  inches deep. What is the total volume of her suitcase? Explain how you found the volume.
- Write your answer in the space below.

- 31 A right triangle is shown.



What is the area of the right triangle?

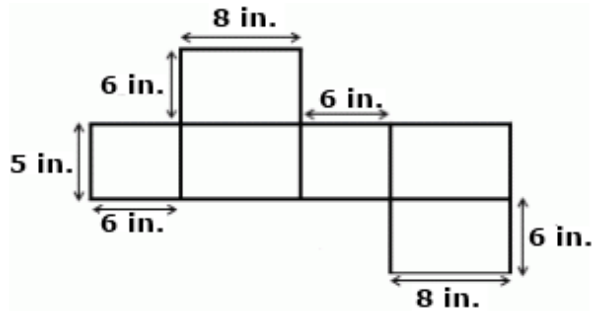
- A.  $37 \text{ in.}^2$
  - B.  $60 \text{ in.}^2$
  - C.  $90 \text{ in.}^2$
  - D.  $120 \text{ in.}^2$
- 32 What is the area of the parallelogram shown below?



- A. 162 square centimeters
- B. 324 square centimeters
- C. 567 square centimeters
- D. 648 square centimeters

Directions: Answer the following question(s).

- 33 What is the surface area of the box shown by the pattern below?



- A.  $90 \text{ in}^2$   
 B.  $228 \text{ in}^2$   
 C.  $236 \text{ in}^2$   
 D.  $240 \text{ in}^2$

- 34 Use the following data table to complete parts A, B, and C

Central Middle School has a summer sports camp. The table below shows the number of students who have signed up to play each sport at the camp. Find each measure that describes the data in the table.

<u>SPORT</u>	<u>Number of Students</u>
Soccer	22
Softball	20
Basketball	28
Football	22
Tennis	14
Volleyball	14

**Part A: What is the MEAN of the data?**

**Part B: What is the MEDIAN of the data?**

**Part C: What is the MODE(s) of the data?**

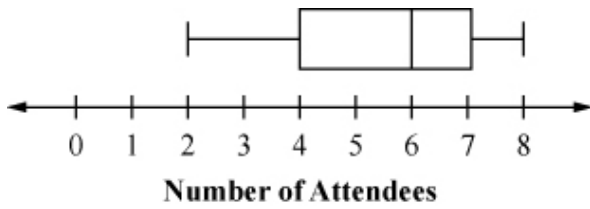
Write your answer in the space below.

- 35 Tim has six math test scores. They are: 83, 80, 88, 86, 88, 70. What is the median score?

- A. 84  
 B. 84.5  
 C. 85  
 D. 85.5

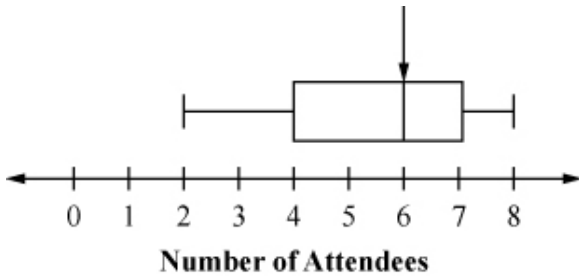
Directions: Answer the following question(s).

- 36 The box plot below shows the attendance numbers for a dance class over a course of 12 weeks.

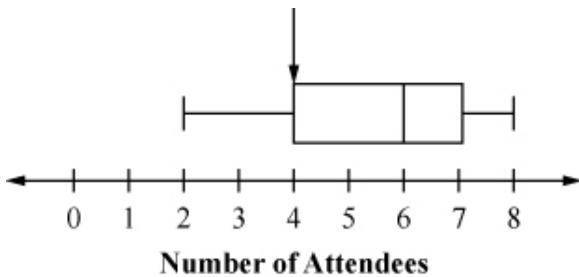


Which of the following represents the interquartile range of the attendance numbers?

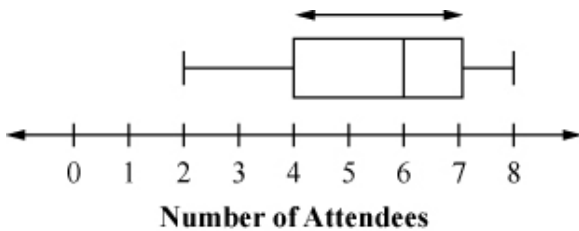
A.



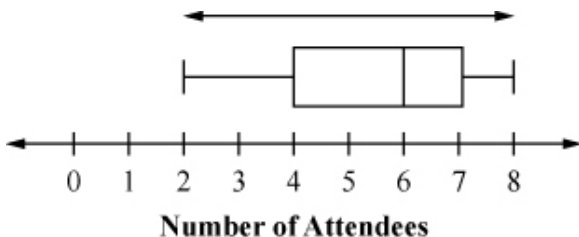
B.



C.



D.

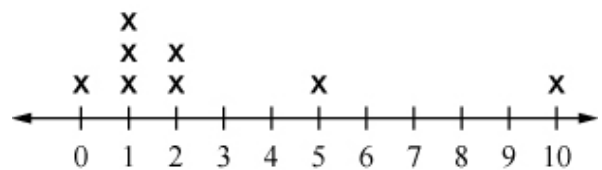


- 37 Which of the following is NOT a statistical question?

- A. How often do students at your school go swimming?
- B. What are the ages of your family members that can swim?
- C. How many times did you go swimming during the last week?
- D. What is the average amount of time you spend at the pool when you go?

- 38 The line plot below shows the number of dollar bills that Nicole and her friends received when they cashed in their penny jars.

**Dollars From Penny Jars**



Which **best** describes the overall shape of the data shown?

- A. The distribution of the data is uniform.
- B. The distribution of the data is symmetric.
- C. Most of the friends received less than 3 dollars for their coins.
- D. Most of the friends received more than 3 dollars for their coins.



Directions: Answer the following question(s).

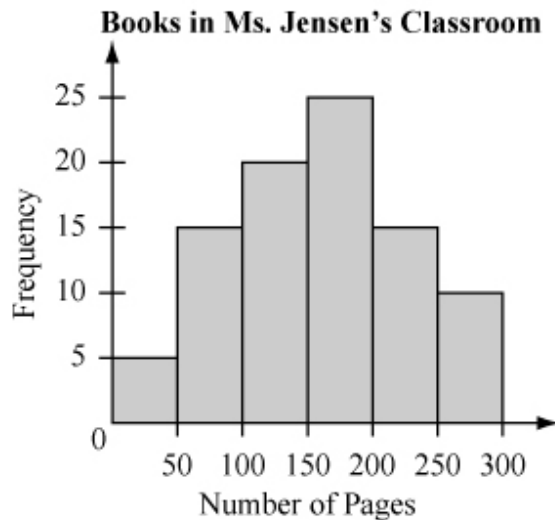
- 39 The data set shown was collected to answer a statistical question.

64, 65, 67, 70, 58, 61, 63

Which statement about the distribution of data is true?

- A. If the number 64 is removed from the data set, the center of the distribution will increase.
- B. If the number 64 is removed from the data set, the center of the distribution will decrease.
- C. If the number 70 is removed from the data set, the spread of the distribution will increase.
- D. If the number 70 is removed from the data set, the spread of the distribution will decrease.

- 40 The histogram shows the number of pages in the books in Ms. Jensen's classroom.



How many books are there in Ms. Jensen's classroom?

- A. 85
- B. 90
- C. 95
- D. 100