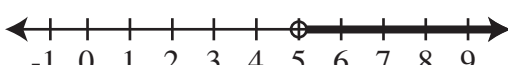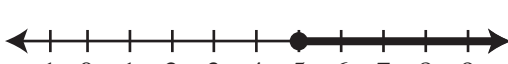**1** Which expression is equivalent to $7 \times (6+10)$?

A $(7 \times 6) + 10$

B $(7 \times 6) + (6 \times 10)$

C $(7 \times 6) + (7 \times 10)$

D $(7+6) \times (7+10)$

2 An inequality is shown below.

$$t > 5$$

Which graph represents all the solutions of the inequality?

A
    -1 0 1 2 3 4 5 6 7 8 9

B
    -1 0 1 2 3 4 5 6 7 8 9

C
    -1 0 1 2 3 4 5 6 7 8 9

D
    -1 0 1 2 3 4 5 6 7 8 9

3 There are 24 pints of chocolate ice cream and 16 pints of vanilla ice cream in a freezer. No other ice cream is in the freezer. One pint of ice cream is randomly selected from the freezer. What is the probability the selected pint is chocolate ice cream?

A 0.08
B 0.24
C 0.40
D 0.60

4 Two figures are shown below. Each figure models a different equation. The equation $2w+6=12$ is modeled by figure 1 .

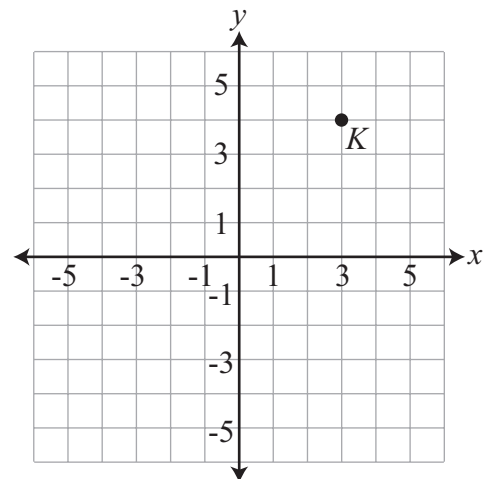**Figure 1:**

Figure 2:

Which equation is modeled by figure 2 ?

A $4w = 7$
B $w+4 = 7$
C $w+3 = 7$
D $3w+4 = 7$

5 Point K is graphed on the coordinate plane below.

What is the **shortest** distance from point K to the x-axis?

A 1 unit
B 3 units
C 4 units
D 7 units

Go On

6 One day, the temperature in a city dropped from 20°F to -4°F . What was the total change in the temperature, in degrees Fahrenheit?
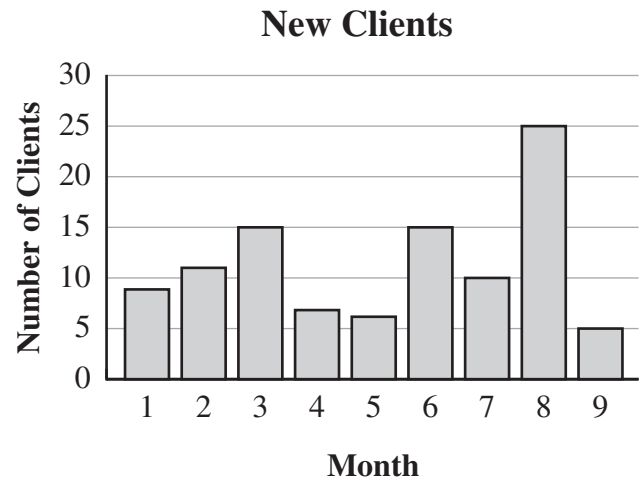
A   -24
B   -16
C   16
D   24

7 A proportion is shown below.

$$\frac{30}{x} = \frac{8}{12}$$

What value of *x* makes the proportion true?

A   20
B   34
C   45
D   50

8 Lisa works to find new clients for a company. The bar graph below shows the number of new clients Lisa found each month for 9 months.

New Clients

Which is the closest approximation of the **mean** of the number of clients Lisa found each month?

A   11 clients
B   15 clients
C   25 clients
D   30 clients

Go On

> **Write your answer to Question 9 on a separate sheet of paper. Be sure to answer Parts A and B.**

9 The table below shows the number of months (*m*) that Jeremy has been collecting baseball cards and the total number of baseball cards (*c*) in his collection at the end of each month.
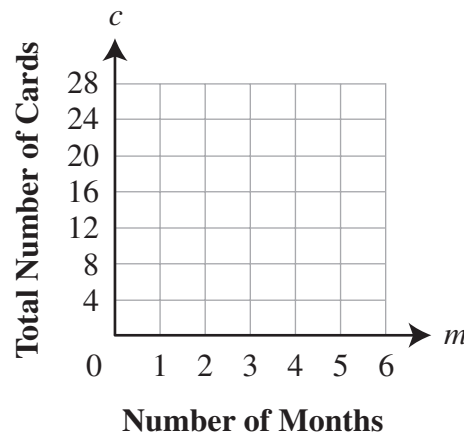
Jeremy's Baseball Card Collection

Number of Months (*m*)	1	2	3	4	5	6
Total Number of Cards (*c*)	6	10	14	18	?	?

The total number of baseball cards in Jeremy's collection follows a pattern, and the pattern continues.

A Using the grid on your paper, copy the graph below. Graph the points that represent the information in the table. Be sure to include the total number of baseball cards for months 5 and 6 in your graph.

Jeremy's Baseball Card Collection

B Jeremy continues to buy the same number of baseball cards each month. Explain why Jeremy will never have 160 cards in his collection at the end of any month (*m*).

Go On

10 Maria has a red folder, a blue folder, and a yellow folder. She will use one folder for math, one for science, and one for social studies. In how many different ways can Maria pick one folder for each class?

A   3
B   5
C   6
D   9

11 A list of numbers is shown below.

$$\frac{7}{8} \quad 0.63 \quad \frac{3}{4} \quad 85\% \quad 0.9$$

What is the order of the numbers from **least** to **greatest**?

A $\frac{3}{4}$ $\frac{7}{8}$ 0.9   0.63   85%

B $\frac{3}{4}$ 0.63 $\frac{7}{8}$ 85%   0.9

C   0.63 $\frac{3}{4}$ $\frac{7}{8}$ 0.9   85%

D   0.63 $\frac{3}{4}$ 85% $\frac{7}{8}$ 0.9

12 Look at the equation below.

$$y = -12 + 2x$$

In which list are all the ordered pairs solutions of the equation?

A   (-12, -12)   (0, 0)   (2, 2)
B   (-12, 0)   (-8, 2)   (0, 6)
C   (0, -12)   (2, -12)   (3, -12)
D   (0, -12)   (3, -6)   (6, 0)

13 Jackie worked on her homework from 4:48 P.M. until 5:25 P.M. She then spent 47 minutes eating dinner before beginning to work on her homework again. Jackie finished her homework at 6:24 P.M. What is the total amount of time Jackie worked on her homework?

A   37 minutes
B   49 minutes
C   1 hour 29 minutes
D   1 hour 36 minutes

Go On

14 In Joselyn's leaf collection, $33\frac{1}{3}\%$ of the leaves are yellow. What fraction of Joselyn's leaf collection is yellow leaves?

A $\frac{1}{3}$

B $\frac{33}{100}$

C $\frac{10}{33}$

D $\frac{3}{10}$

15 In the diagram below, figure 1 shows two blocks that each measure 1 centimeter (cm) by 1 cm by 1 cm. Figure 2 shows the two blocks from figure 1 stacked directly on top of each other and glued together to form one large block.
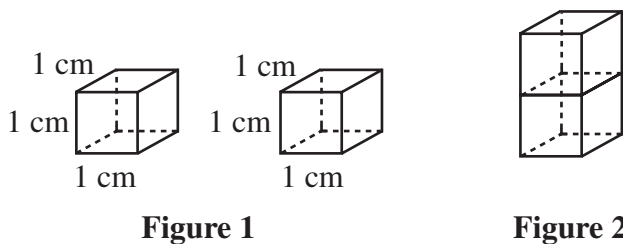

Figure 1   **Figure 2**

What is the surface area of the large block shown in figure 2 ? $(SA = 2lw + 2lh + 2hw)$

A   2 cm²
B   6 cm²
C   10 cm²
D   12 cm²

16 A school choir must practice singing for at least 175 minutes each week. So far this week they have practiced for 85 minutes. Which inequality describes all the possible numbers of minutes (m) the choir must practice singing during the remainder of this week?

A $m \geq 90$
B $m \leq 90$
C $m \geq 260$
D $m \leq 260$

Go On

17 The pictograph below shows the number of people in an office who have birthdays in each season.

Office Birthdays

Season	Number of People
Spring	🧁 🧁 🧁
Summer	🧁 🧁 🧁 🧁 🧁
Fall	🧁 🧁 🧁 🧁 🧁 🧁 🧁
Winter	🧁 🧁 🧁 🧁 🧁

Key
🧁 = 4 people

How many people in the office have birthdays in the winter?

A   5 people
B 17 people
C 18 people
D 20 people

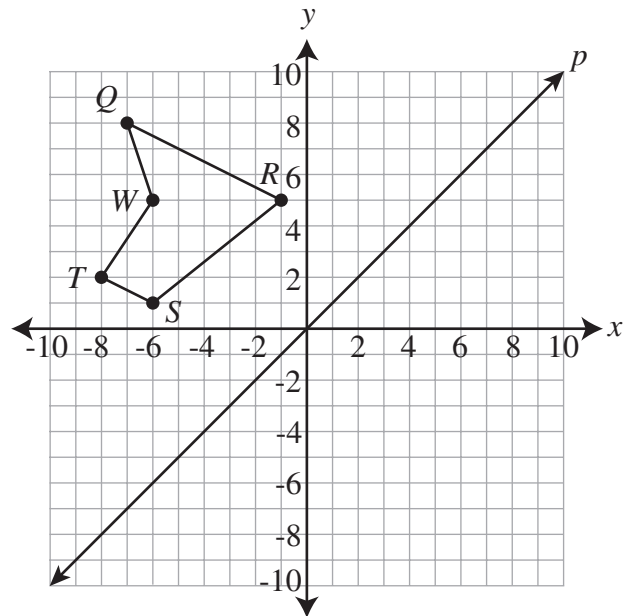**18** Look at figure *QRSTW* on the coordinate plane below.

Figure *QRSTW* will be reflected across line *p* . Which ordered pair describes the location of point *R* after the reflection?

A (-1, -5)
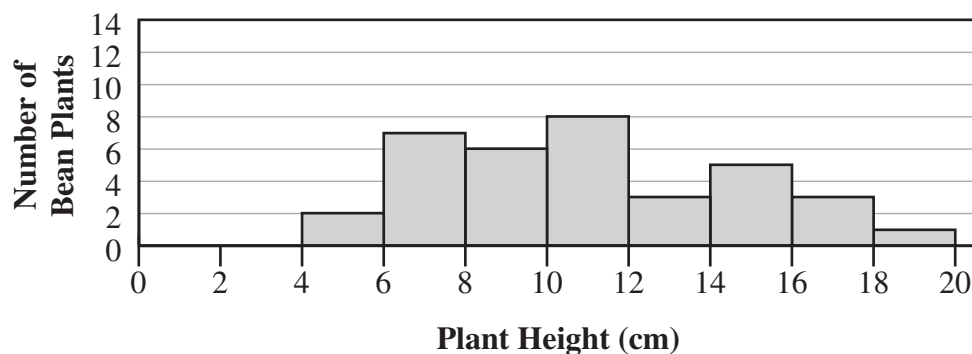B (1, 5)
C (5, 5)
D (5, -1)

Go On

> **Write your answer to Question 19 on a separate sheet of paper. Be sure to answer Parts A, B, and C.**

19 Carson is growing bean plants for a science experiment. He measures the heights of the bean plants every five days. The results of his first measurement day and his second measurement day are shown in the histograms below.

Heights of Bean Plants—First Measurement Day

Number of Bean Plants (vertical axis, 0 to 14) vs. Plant Height (cm) (horizontal axis, 0 to 20)
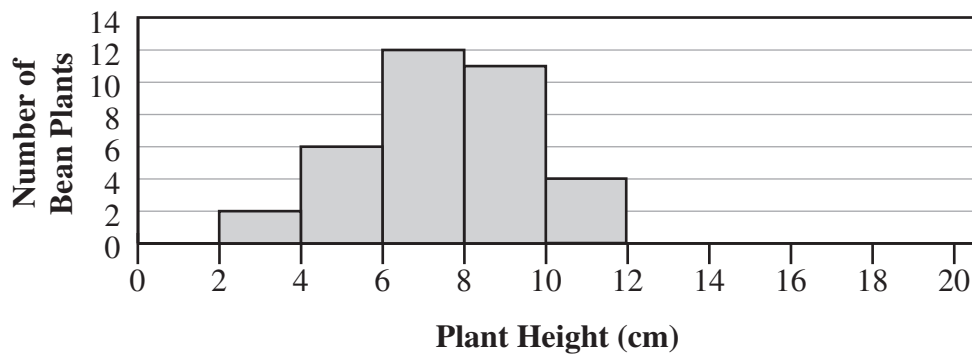
Heights of Bean Plants—Second Measurement Day

Number of Bean Plants (vertical axis, 0 to 14) vs. Plant Height (cm) (horizontal axis, 0 to 20)

A Describe how the **median** of the heights of the bean plants changed between the first measurement day and the second measurement day.

B Describe how the **range** of the heights of the bean plants changed between the first measurement day and the second measurement day.

C Explain what the change in the **range** of the heights of the bean plants from the first measurement day to the second measurement day tells you about the growth of the bean plants.

Go On

20 What is the value of $|4 + \text{-}6|$?

    A -10
    B -2
    C 2
    D 10

21 An investor puts $1,500 into an account that earns simple interest at a rate of 6% per year. The investor does not deposit any additional money into or withdraw any money from the account for 3 years. What is the total amount of simple interest the account earns over the 3 years?

    A $90
    B $270
    C $1,770
    D $27,000

22 The line graphed on the coordinate plane shown below represents solutions of a linear equation.
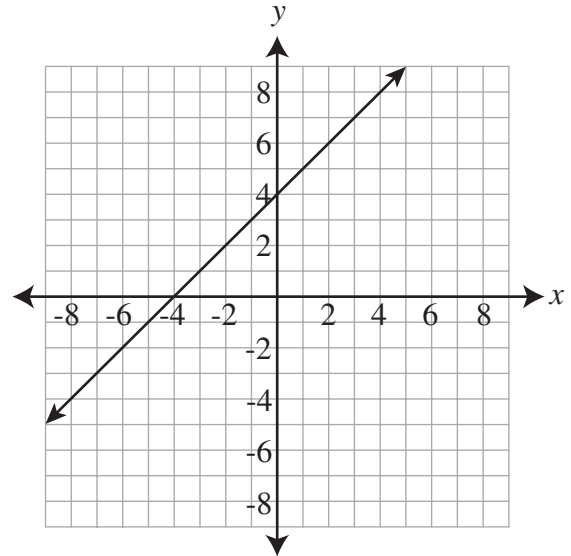
Which ordered pairs are solutions of the linear equation?

    A (-4, 0) and (-2, -2)
    B (-3, 1) and (6, 2)
    C (1, 3) and (0, 4)
    D (1, 5) and (-6, -2)

Go On

23 The stem-and-leaf plot below shows the grades students earned on a science test.

Science Test Grades

```
6 | 5
7 | 1 3 4 6 6
8 | 2 3 5 7
9 | 0 2
```

Key
6	5 = 65

What percent of the students earned a grade **greater** than 79 ?

A 33%
B 38%
C 50%
D 60%

24 A triangular prism is shown in the diagram below.
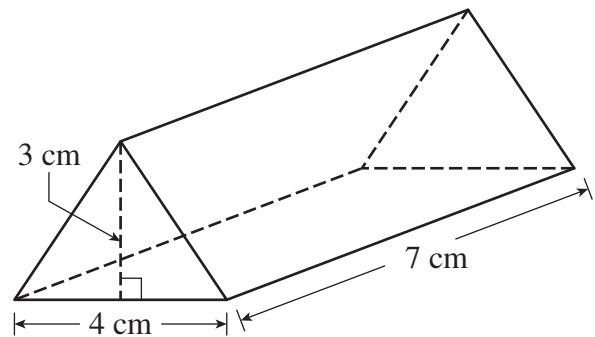
What is the volume of the prism?
(V = Area of base $\times$ h)

A 33 cm^3
B 42 cm^3
C 49 cm^3
D 84 cm^3

25 What is the value of $2(c-3)$ when $c = 9$?

A 6
B 12
C 15
D 26

Go On

26 Peter needs 150 **square meters** of carpet. The carpet is sold by the **square foot**. Which is the best ESTIMATE of the number of **square feet** of carpet Peter needs?

A   17 square feet
B   150 square feet
C   1,350 square feet
D   21,600 square feet

27 Look at the input/output table below.
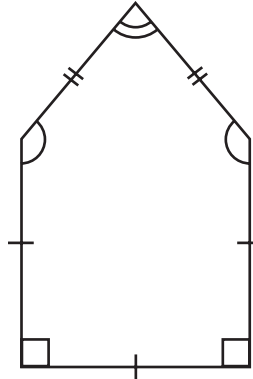
Input	Output
1	0
3	4
5	8
7	12

What is the output value when the input value is 17 ?
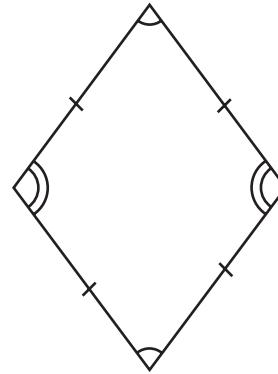
A   32
B   36
C   64
D   68

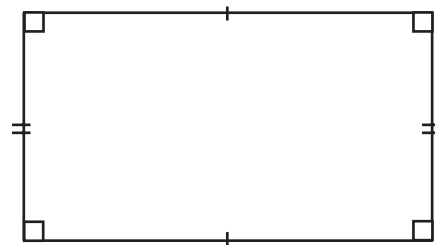**28** Which polygon is regular?
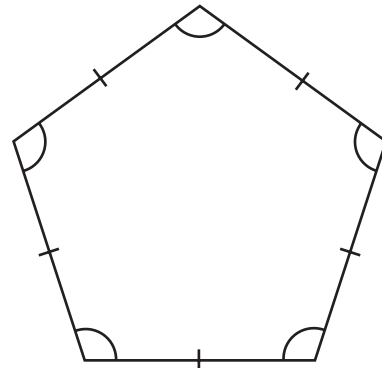
A

B

C

D

Go On

Write your answer to Question 29 on a separate sheet of paper. Be sure to answer Parts A and B.

---

29 Regina finishes school at 2:57 P.M. She plans to be at a football game at 7:15 P.M. Some information about how Regina will spend the time between school and the game is listed below.

- She will spend 24 minutes walking home from school.

- She will spend $1\frac{1}{4}$ hours doing homework.

- She will spend some time playing basketball.

- She will spend 1 hour 27 minutes driving to the football game.

A What is the greatest amount of time Regina can spend playing basketball and still be at the game at 7:15 P.M.? Show your work.

B Regina arrives at the football game at 7:15 P.M. She stays at the football game for $2\frac{4}{5}$ hours, and then she drives home. Her drive home takes 35 minutes longer than her drive to the game.

What is the earliest time that Regina will arrive home after the game? Show your work. Be sure to include A.M. or P.M. in your answer.
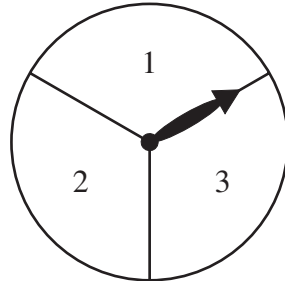
Go On

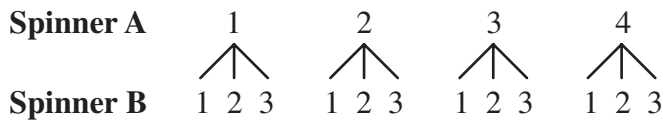**30** Wendy will spin the arrow on each of the spinners shown below one time.
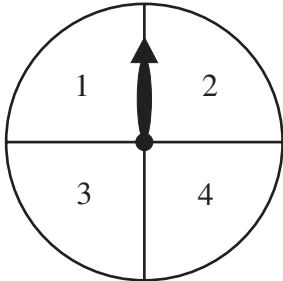
Spinner A   **Spinner B**

The possible outcomes for her 2 spins are shown in the tree diagram below.

Spinner A   1   2   3   4

Spinner B   1 2 3   1 2 3   1 2 3   1 2 3

What is the probability the numbers in the sections where the arrows stop are the **same**?

A $\dfrac{1}{12}$

B $\dfrac{1}{7}$

C $\dfrac{1}{4}$

D $\dfrac{1}{3}$

31 Sally's puppy weighs 14 **pounds**. Approximately how many **kilograms** does the puppy weigh?

A   7 kilograms
B   14 kilograms
C   21 kilograms
D   28 kilograms

32 Beth, Mary, and Felix took turns driving from Parkside to Anderson. First, Beth drove 40% of the distance, then Mary drove $\dfrac{3}{5}$ of the **remaining** distance. Felix then drove the final 108 miles. What is the total distance from Parkside to Anderson?

A   162 miles
B   216 miles
C   252 miles
D   450 miles

33 The ages of the performers in a play are shown in the stem-and-leaf plot below.

Ages of Performers

```
1 | 0 2 2
2 | 1 3 5 6 7
3 | 9
4 | 5 7 8
5 |
6 | 8
```
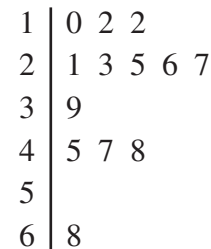
Key
4 | 7 = 47 years

What is the **mode** of the ages of the performers?

A   10 years
B   12 years
C   20 years
D   26 years

Go On

34 Which graph represents the equation $y = -2x + 4$?

A

B

C

D

Go On
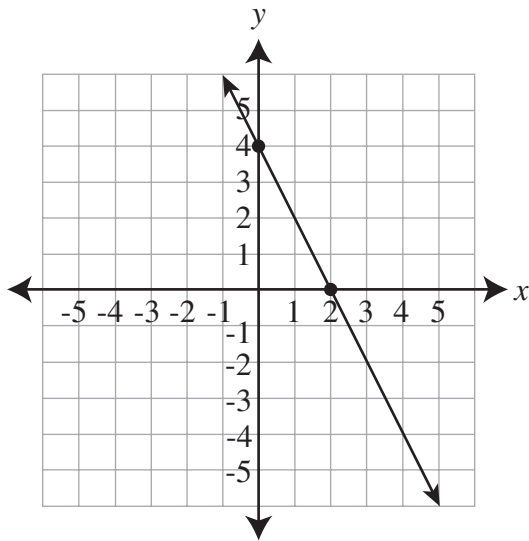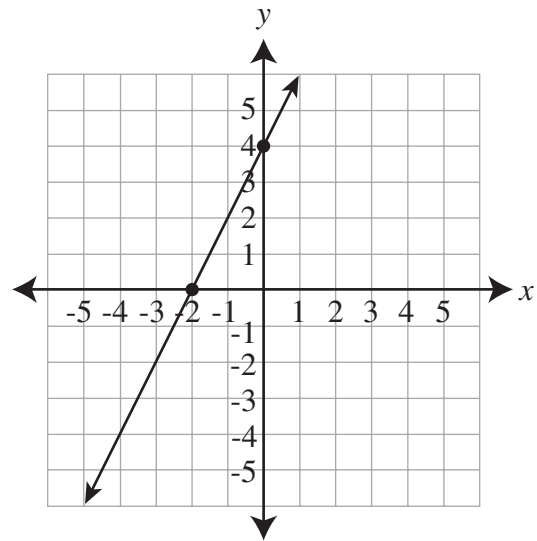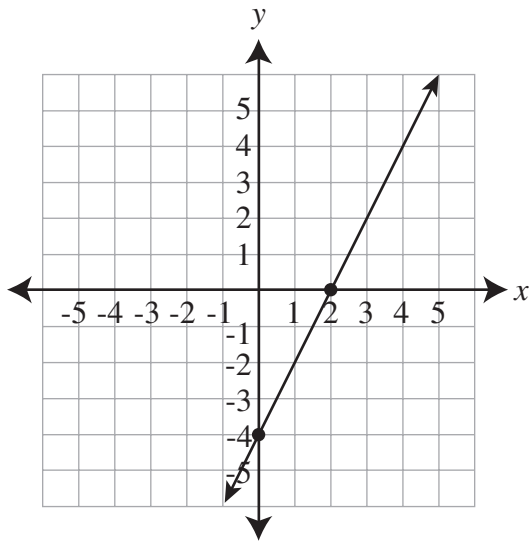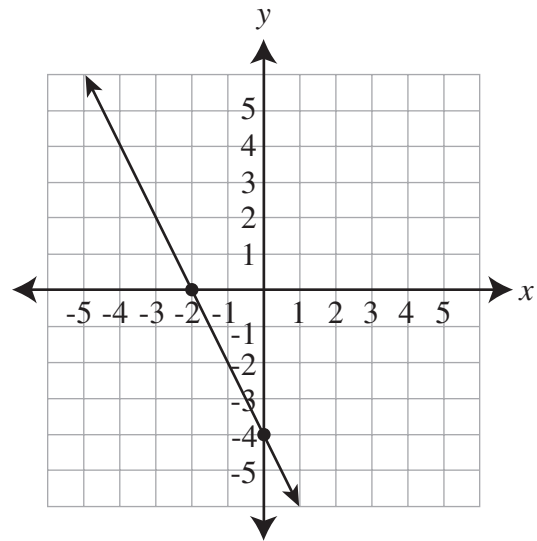
35 How many significant digits are in the number 0.0072140 ?

    A 4 digits
    B 5 digits
    C 7 digits
    D 8 digits

36 Liam's recipe requires 12 ounces of flour to make 60 cookies. He only has 10 ounces of flour, so he will need to adjust the recipe. How many cookies can Liam make with 10 ounces of flour?

    A 50 cookies
    B 58 cookies
    C 60 cookies
    D 72 cookies

37 Two pairs of parallel lines intersect to form parallelogram *WXYZ*, as shown in the diagram below.
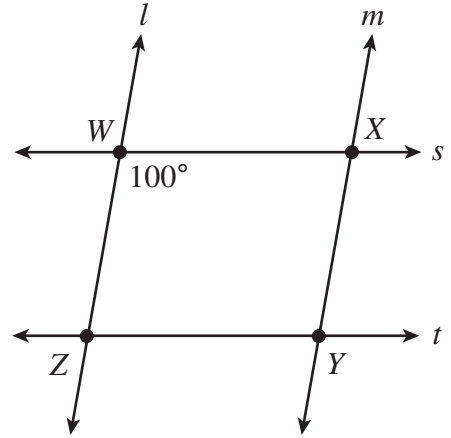
The measure of ∠*ZWX* is 100° . What is the measure of ∠*WXY* ?

    A   70°
    B   80°
    C 100°
    D 260°

Go On

38 The bar graph below shows the number of points Bryce scored in each of the first 9 basketball games he played this year.

Points Scored by Bryce in Basketball Games
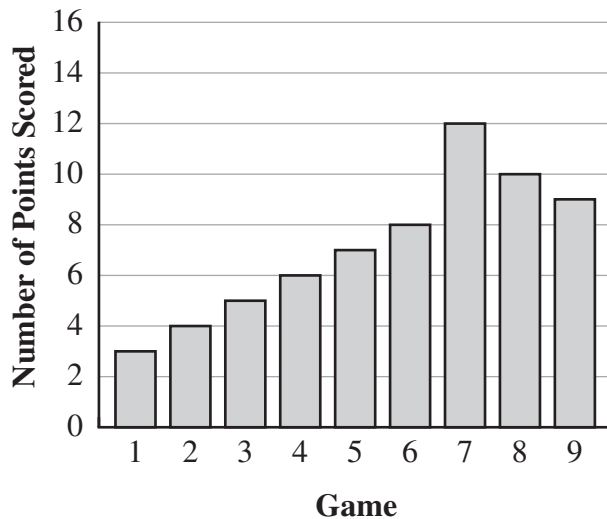
Based on the graph, as Bryce played more games this year, the number of points he scored in each game

A continually decreased.
B continually increased.
C decreased then increased.
D increased then decreased.

39 Amber, Brandon, and Carolyn are the 7th grade class officers. Their teacher will randomly select who will be the president, vice president, and secretary for the class. The chart below shows all the possible combinations of president, vice president, and secretary.

Class Officers

President	Vice President	Secretary
Amber	Brandon	Carolyn
Amber	Carolyn	Brandon
Brandon	Amber	Carolyn
Brandon	Carolyn	Amber
Carolyn	Amber	Brandon
Carolyn	Brandon	Amber

What is the probability the teacher will select Brandon to be vice president?

A $\frac{1}{9}$

B $\frac{1}{6}$

C $\frac{1}{3}$

D $\frac{2}{3}$

Go On

> **Write your answer to Question 40 on a separate sheet of paper. Be sure to answer Parts A and B.**

40 John measures the depth of a pond near his house on the same day each week. The scatter plot below shows the data John recorded over a 20-week period.

Depth of a Pond
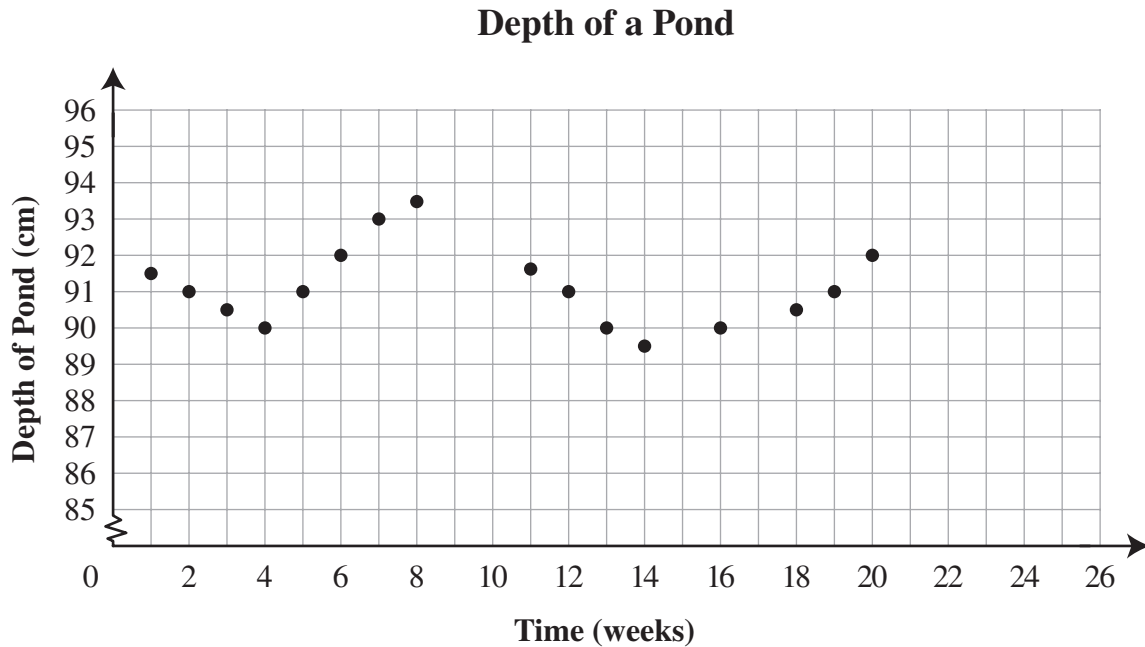
John forgot to record the depth of the pond during week 9, week 10, week 15, and week 17 . However, John knows that the depth of the pond was 93 centimeters (cm) during one of these weeks.

A During which of these weeks was the depth of the pond **most** likely 93 cm? Use the data in the scatter plot to explain your thinking.

B John used the data he recorded from week 1 through week 20 to predict the depth of the pond during week 24 .

Explain why using the data shown in the scatter plot could lead to a prediction that is **not** accurate.

Go On

41 Look at the input/output table below.

Input (*x*)	Output (*y*)
2	-20
4	-34
6	-48
8	-62
10	?

What is the output value (*y*) when the input value (*x*) is 10 ?

A   -72
B   -76
C   -100
D   -110

42 Four students will present book reports to their class. In how many different orders can the students present their book reports?

A   4
B   10
C   16
D   24

43 Jeffrey plans to spend between $2.25 and $3.75 on lunch each day of the school year. There are 180 days in the school year. Which is the **best** ESTIMATE of the amount of money Jeffrey will spend on lunches for the entire school year?

A $100 to $200
B $200 to $400
C $400 to $800
D $800 to $1,600

44 A softball team is playing on a softball field shaped like a square. Player Y is standing 20 feet (ft) beyond first base and player X is standing by 3rd base, as shown in the diagram below.
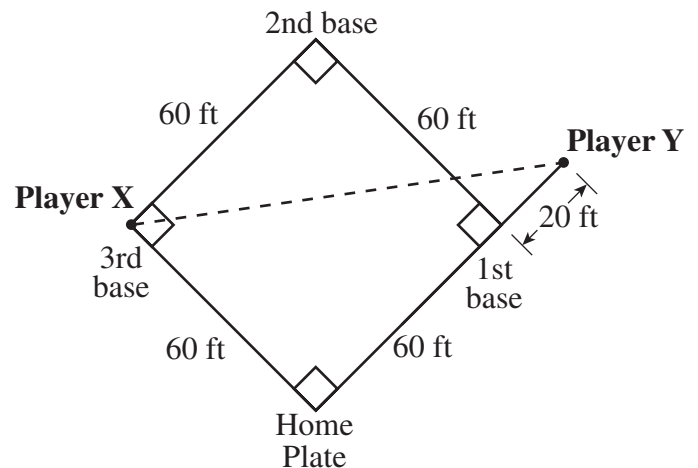
Player Y throws the ball directly to player X . Approximately how far does the ball travel from player Y to player X ?

A   60 ft
B   80 ft
C   100 ft
D   120 ft

Go On

45 Rectangle *PQST* was translated to create the rectangle *P′Q′S′T′* . Rectangle *P′Q′S′T′* is shown on the coordinate grid below.

The original rectangle *PQST* was translated right 2 units and up 1 unit to make rectangle *P′Q′S′T′* . Which ordered pair describes the location of vertex *P* on the original rectangle?
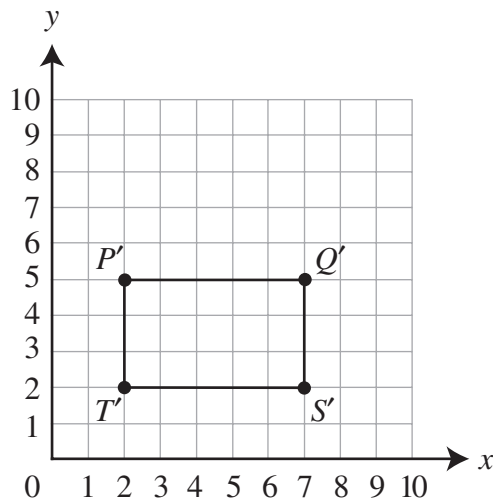
A (0, 4)
B (0, 6)
C (4, 4)
D (6, 4)

46 Mr. Jones opens a bank account with $10,000 . The account earns 4% simple interest per year. Mr. Jones does not make any additional deposits or withdraw any money from the account for 2 years. What is the total amount of money in the account after 2 years?

A $10,400
B $10,800
C $12,500
D $15,000

47 Look at the graph below.

Which inequality describes the graph?

A $w < 4$
B $w \leq 4$
C $w > 4$
D $w \geq 4$

48 Zachary puts some cherry and some lemon jellybeans into each of 6 bags. He puts 50 cherry jellybeans and 4 lemon jellybeans into each bag. Which expression could be used to determine the total number of jellybeans of **each** flavor that Zachary puts in the bags?

A 6×54

B $6 \times 50 + 4$

C $6 + (50 \times 4)$

D $6 \times (50 + 4)$

Go On

49 Sean used a rule to create the input/output table shown below.

Input	Output
2	5
3	9
4	13
5	17

Which rule describes the relationship between the input numbers and the output numbers?

A   output = 3 + input
B   output = 3 × input
C   output = (2 × input) + 1
D   output = (4 × input) − 3

50 A new recreation center opened in a community. The table below shows the approximate number of visitors to the recreation center each year for the first nine years it was open.

Recreation Center Visitors

Year	Approximate Number of Visitors
1	16,000
2	24,000
3	30,500
4	34,000
5	35,000
6	35,500
7	35,000
8	36,000
9	35,500

Based on the information in the table, which is the **best** prediction of the approximate number of visitors to the recreation center in the 11th year it is open?

A   32,000 visitors
B   36,000 visitors
C   40,000 visitors
D   73,000 visitors

Go On

Correct Answers for Multiple-choice Items

Item Number	Correct Answer	Content Cluster	DOK	Item Number	Correct Answer	Content Cluster	DOK
1	C	C1	1	26	C	C3	2
2	B	C2	1	27	A	C2	2
3	D	C4	1	28	D	C3	1
4	B	C2	2	29	*	C3	3
5	C	C3	1	30	C	C4	2
6	A	C1	1	31	A	C3	1
7	C	C3	1	32	D	C1	2
8	A	C4	2	33	B	C4	1
9	*	C2	3	34	A	C2	2
10	C	C4	2	35	B	C1	1
11	D	C1	2	36	A	C3	2
12	D	C2	1	37	B	C3	1
13	B	C3	2	38	D	C4	1
14	A	C1	1	39	C	C4	2
15	C	C3	2	40	*	C4	3
16	A	C2	2	41	B	C2	1
17	C	C4	1	42	D	C4	2
18	D	C3	2	43	C	C1	2
19	*	C4	3	44	C	C3	2
20	C	C1	1	45	A	C3	2
21	B	C3	1	46	B	C3	2
22	D	C2	1	47	D	C2	1
23	C	C4	2	48	D	C1	2
24	B	C3	1	49	D	C2	2
25	B	C2	1	50	B	C4	2

* Indicates a written-response item. See the following pages for the rubrics and examples of responses.

Detailed objectives for Content Standards and Depth of Knowledge (DOK) descriptions can be found on the Nevada Department of Education Website.