1 Which ratio is equivalent to $\frac{3}{4}$?

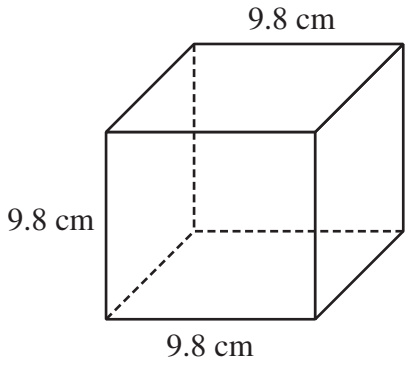
A $\frac{3}{12}$

B $\frac{9}{16}$

C $\frac{9}{12}$

D $\frac{4}{3}$

2 Carlie plans to paint each face of the cube shown in the diagram below.



Which is the **best** ESTIMATE of the surface area of the cube?

A 486 cm^2
B 600 cm^2
C 729 cm^2
D 1000 cm^2

3 The table below shows the ages of the members of Isabelle's family.

Isabelle's Family

Name	Age
Dad	45
Mom	39
Isabelle	14
Jonny	11
Mary	8
LouAnne	3

Which statistical measure describes the difference in the ages of the oldest and youngest members of Isabelle's family?

A mean
B median
C mode
D range

Go On

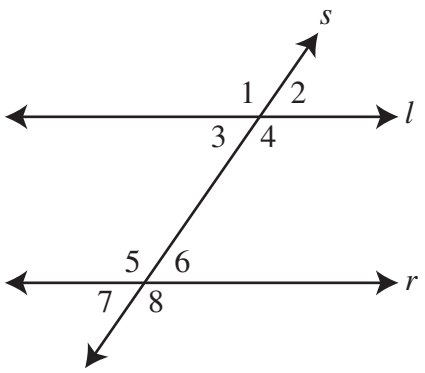
4 What is the value of the expression $5n - 4$ when $n = 1.2$?

A 2
B 2.2
C 5.8
D 56

5 The equation $2(5 + 7) = (2 \bullet 5) + (2 \bullet 7)$ illustrates what property?

A associative property
B commutative property
C distributive property
D identity property

6 In the diagram below, line *s* intersects line *l* and line *r* .

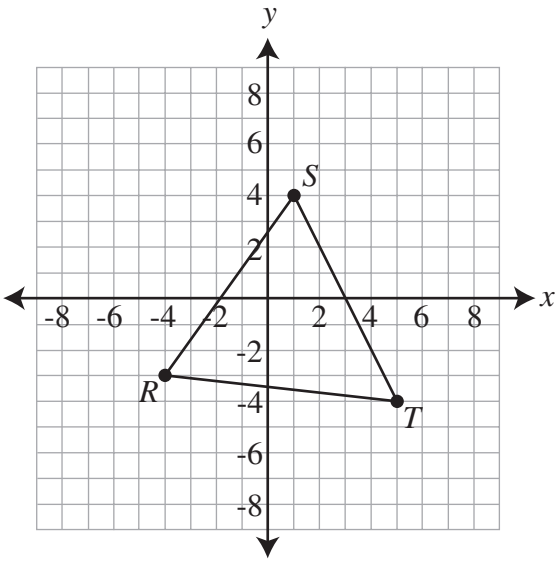


Which pair of angles in the diagram are vertical angles?

A $\angle 1$ and $\angle 2$
B $\angle 3$ and $\angle 6$
C $\angle 4$ and $\angle 7$
D $\angle 5$ and $\angle 8$

Go On

7 Triangle *RST* is graphed on the coordinate plane below.



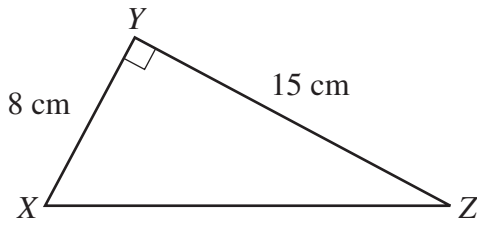
What ordered pair describes the location of vertex *R* ?

A (-4, -3)
B (-3, -4)
C (-4, 0)
D (0, -4)

8 Lydia created a rectangle-shaped design that is 12 inches wide and 15 inches long. She plans to make an enlargement of the design that will be similar to the original design. The enlargement will be 80 inches wide. How long will the enlargement of the design be?

A 105 inches
B 100 inches
C 96 inches
D 60 inches

9 Triangle *XYZ* is a right triangle with legs measuring 8 cm and 15 cm, as shown below.



What is the length of $\overline{XZ}$?

A 23 cm
B 21 cm
C 19 cm
D 17 cm

Go On

Write your answer to Question 10 on a separate sheet of paper. Be sure to answer Parts A and B.

10 The table below shows the number of boys and the number of girls in seventh grade at a school in the years 1985, 1990, 1995, and 2000 .

Boys and Girls in Seventh Grade

	Year			
	1985	**1990**	**1995**	**2000**
Boys	50	51	53	52
Girls	50	55	60	62

A Create a double bar graph to show the information in the table. Be sure the graph you create includes a title, axis labels, and a key.

B In which year was the difference between the number of boys in seventh grade and the number of girls in seventh grade the **least**? Explain your thinking.

11 What value of x would make the equation $\frac{2}{3} = \frac{8}{x}$ true?

A 3
B 9
C 12
D 24

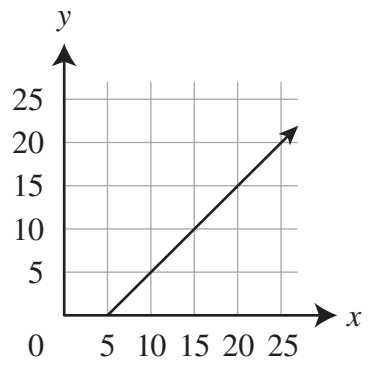
12 Cedric received 55 minutes of tutoring and then waited 12 minutes for the bus ride home. The bus arrived to take Cedric home at 3:47 P.M. At what time did Cedric's tutoring begin?

A 2:20 P.M.
B 2:40 P.M.
C 2:54 P.M.
D 3:04 P.M.

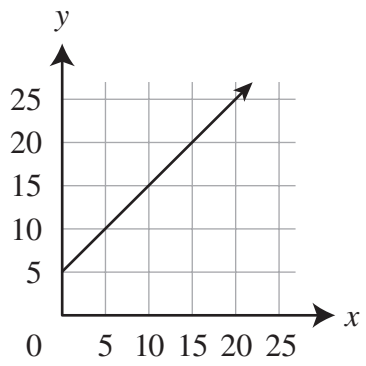
Go On

13 The ordered pairs (12, 7), (25, 20), (15, 10), and (8, 3) represent Xena's age (x) and Yuri's age (y) . The equation $y = x - 5$ describes the relationship between Xena's age and Yuri's age. Which graph best shows the relationship between their ages?

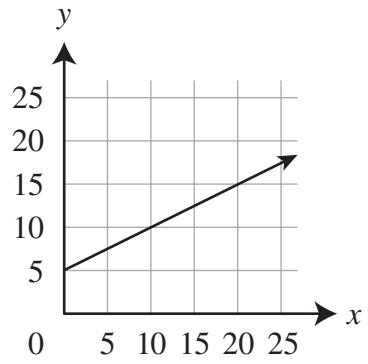
A



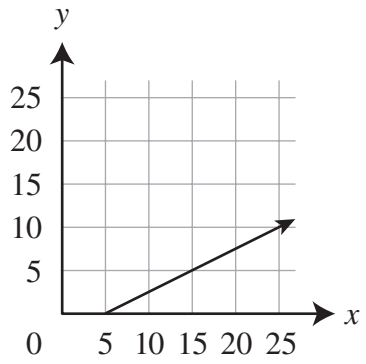
C



B



D



Go On

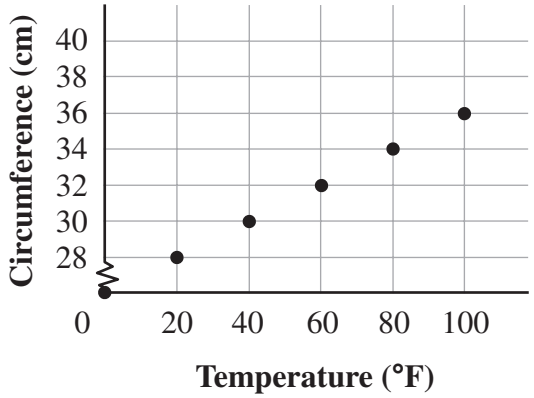
14 The table below shows the effect of heat on the circumference of an inflated balloon.

Effect of Heat on a Balloon's Circumference

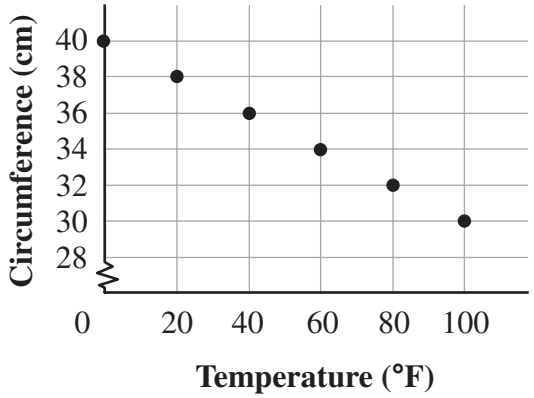
Temperature	Balloon Circumference (in centimeters)
40°F	28 cm
50°F	30 cm
60°F	32 cm
70°F	34 cm
80°F	36 cm
90°F	38 cm

Which graph shows the same information as the table?

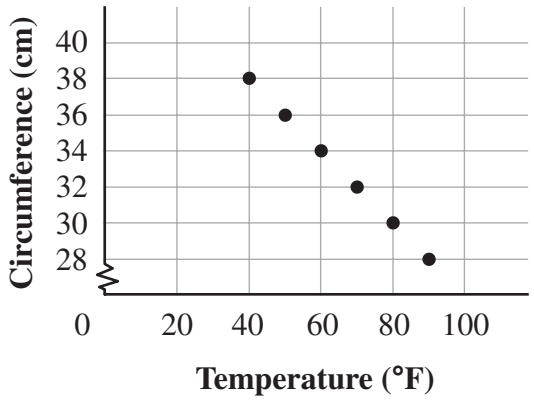
A



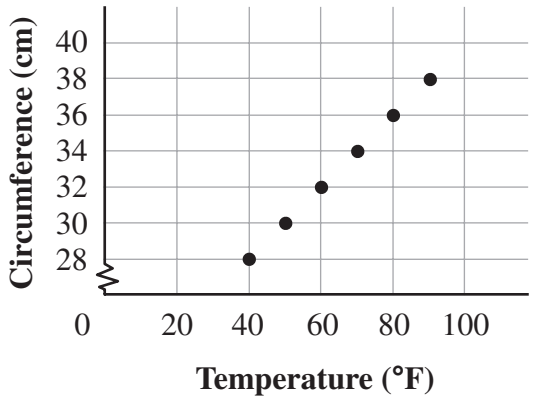
C



B



D



Go On

15 A full carton of milk contains 3.8 **liters** of milk. How many **milliliters** (ml) of milk does a full carton contain?

A 38000 ml
B 3800 ml
C 380 ml
D 38 ml

16 The table below shows the number of electric cars produced by a car company each year during the first six years of production.

Electric Car Production

Year	Number of Electric Cars Produced
1	486
2	1,009
3	2,022
4	3,995
5	8,016
6	15,890

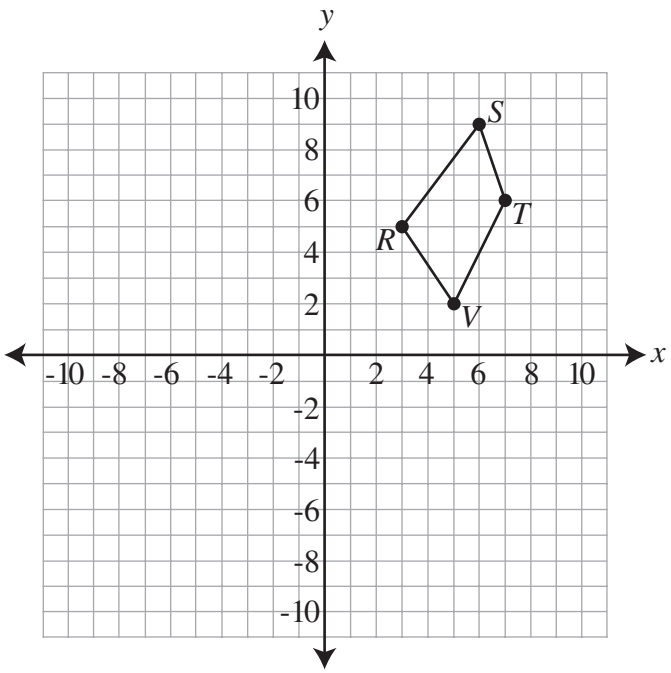
Based on the information shown in the table, which is the **best** prediction of the number of electric cars that will be produced by the company during year 7 of production?

A 16,000 cars
B 24,000 cars
C 32,000 cars
D 40,000 cars

17 A rental car company charges $14 per day plus $0.15 per mile driven to rent a car. Gino rents a car from the company for 7 days and drives the car n miles. Which expression could be used to determine the total cost, in dollars, of Gino's car rental?

A $21n + 0.15$
B $0.15n + 14 \bullet 7$
C $14n + 0.15 \bullet 7$
D $14.15n + 7$

18 Quadrilateral *STVR* is graphed on the coordinate plane below.



Quadrilateral *STVR* will be rotated 90° clockwise about the origin (0, 0) . What will be the new coordinates of point *R* ?

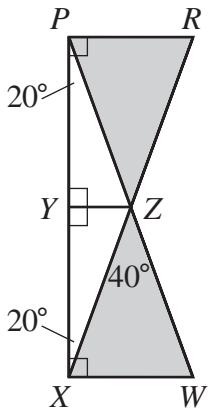
A (-5, 3)
B (-3, 5)
C (3, -5)
D (5, -3)

Go On

19 Jocelyn addressed 24 envelopes in 5 minutes. Jocelyn continues to address envelopes at the same rate. How many envelopes will she address in 60 minutes?

A 31 envelopes
B 79 envelopes
C 288 envelopes
D 1,440 envelopes

20 Manny used pieces of stained glass to create a design. In Manny's design, shown below, triangle *PYZ* is congruent to triangle *XYZ*, and triangle *PRZ* is congruent to triangle *XWZ* .



What are the measures of the three interior angles in triangle *PRZ* ?

A 70°, 70°, and 40°
B 50°, 60°, and 70°
C 40°, 60°, and 80°
D 20°, 70°, and 90°

21 Look at the numbers below.

$$\frac{1}{2},\ 0.65,\ 47\%,\ \frac{2}{3},\ 0.53$$

Which list shows the numbers in order from the **least** value to the **greatest** value?

A 47%, $\frac{1}{2}$, 0.53, 0.65, $\frac{2}{3}$

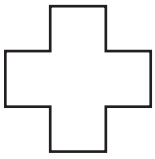
B $\frac{1}{2}$, $\frac{2}{3}$, 0.53, 0.65, 47%

C $\frac{1}{2}$, 47%, 0.53, $\frac{2}{3}$, 0.65

D 47%, 0.65, $\frac{2}{3}$, $\frac{1}{2}$, 0.53

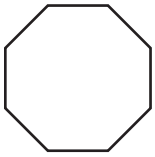
22 Marina has a place mat in the shape of a regular decagon. Which appears to be the shape of Marina's place mat?

A

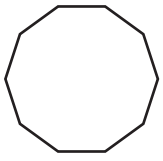


B

C



D



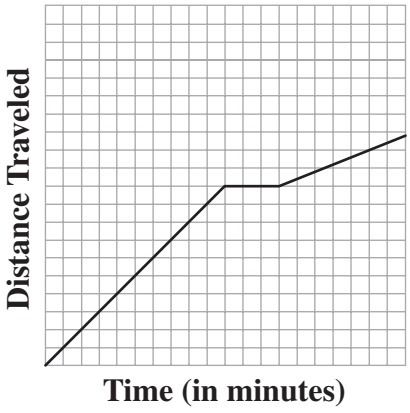
Go On

23 During P.E. class yesterday, Erin participated in three different activities: running laps, resting, and walking laps. The amount of time she spent on each activity is listed below.

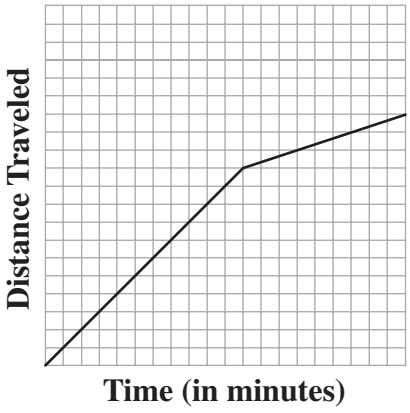
- Running laps: 10 minutes
- Resting: 3 minutes
- Walking laps: 7 minutes

Which graph **best** represents the relationship between the distance Erin traveled and the amount of time Erin spent on the three activities?

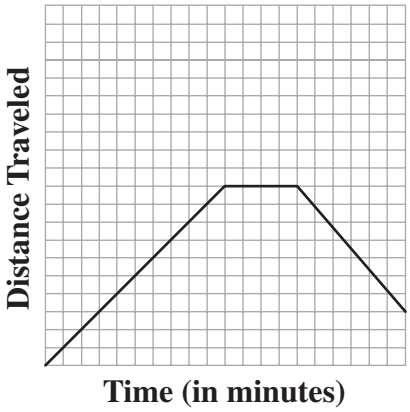
A



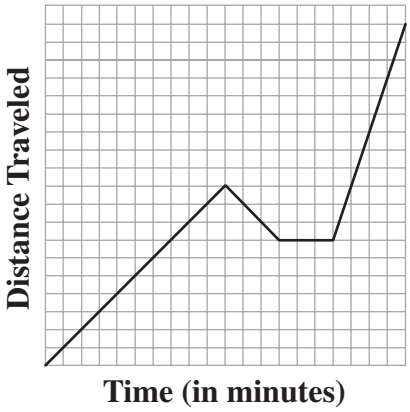
C



B



D



Go On

24 A flight scheduled to depart at 11:53 A.M. was delayed until 1:10 P.M. How long was the flight delayed?

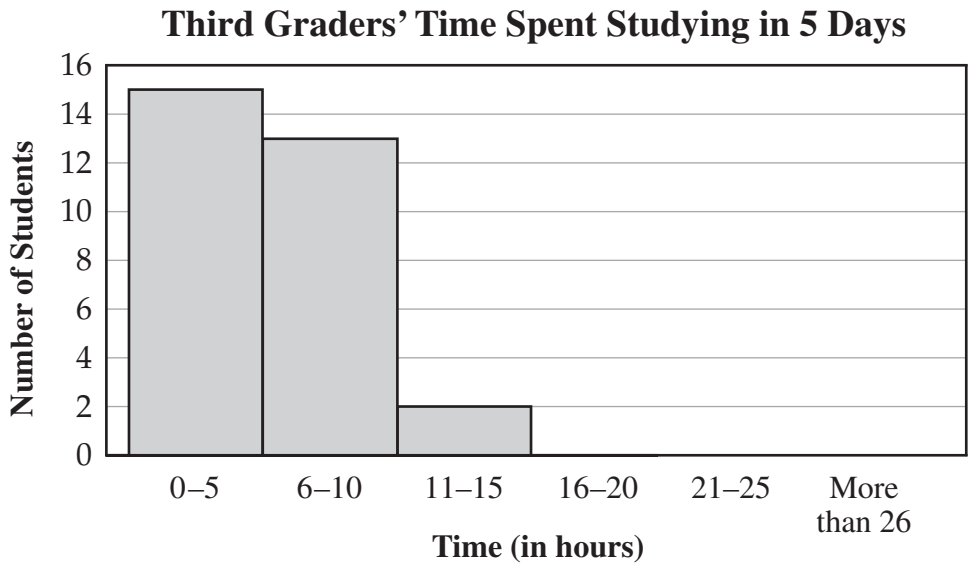
A 1 hour 7 minutes
B 1 hour 17 minutes
C 2 hours 3 minutes
D 2 hours 43 minutes

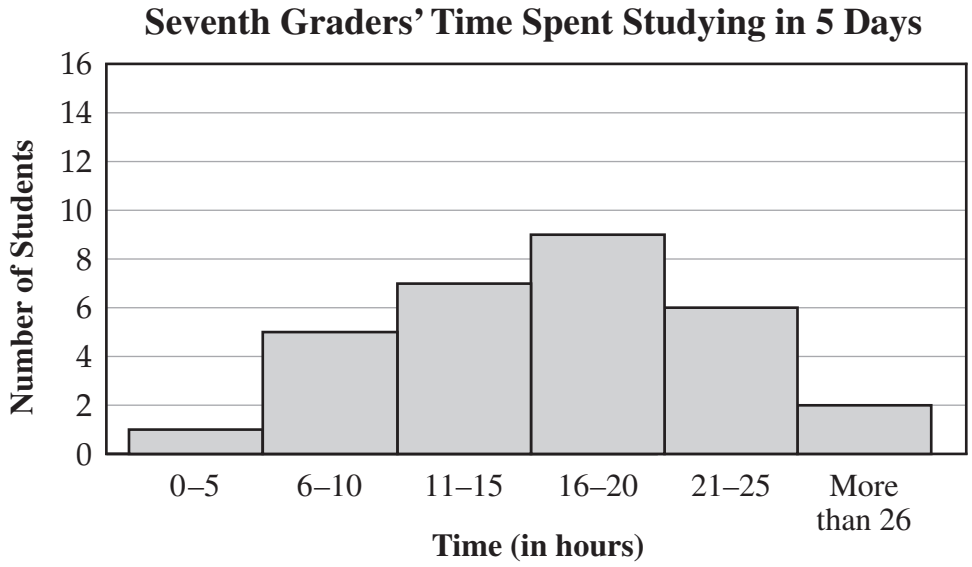
25 A concert manager estimates that attendance will be 36,500 people at the first concert of the season and 42,000 people at the second concert of the season. Tickets cost between $10 and $25 per person. Which is the **best** ESTIMATE of the total amount of money that will be received in ticket sales for the two concerts?

A between $350,000 and $450,000
B between $500,000 and $750,000
C between $780,000 and $2,000,000
D between $2,030,000 and $2,140,000

Go On

26 The 30 students in a third-grade class and the 30 students in a seventh-grade class recorded the total number of hours, rounded to the nearest hour, that each student spent studying during a 5-day period. The histogram below represents the information the students recorded.



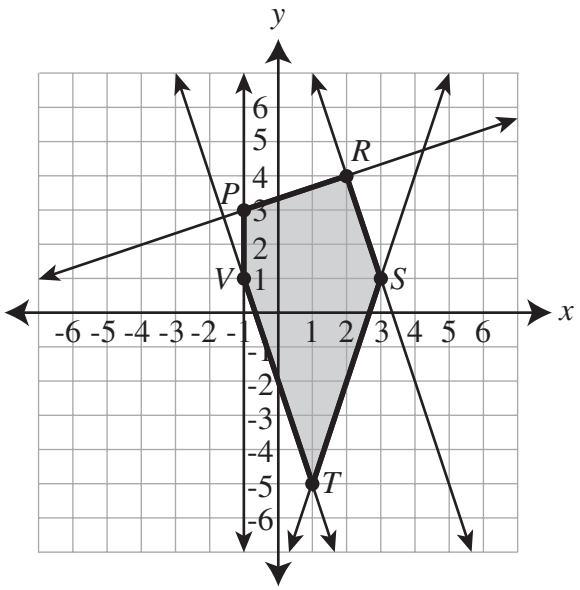


Based on the histogram, which statement is true?

A The data for the third-grade students has more outliers than the data for the seventh-grade students.
B The seventh-grade students spent less time studying than the third-grade students.
C There is a greater range in the amount of time the third-grade students spent studying than the seventh-grade students spent studying.
D There is more variability in the amount of time the seventh-grade students spent studying than the third-grade students spent studying.

Go On

27 The lines graphed on the coordinate plane below intersect to form polygon *PRSTV* .



Which side of polygon *PRSTV* is on a line with a slope of 3 ?

A $\overline{PR}$

B $\overline{ST}$

C $\overline{TV}$

D $\overline{VP}$

28 To make 10 pints of a special color of paint, Nancy mixes 6 pints of red paint and 4 pints of blue paint. Which proportion could be used to determine the number of pints of red paint (r) Nancy needs to use to make 40 pints of the special color of paint?

A $\frac{6}{4} = \frac{40}{r}$

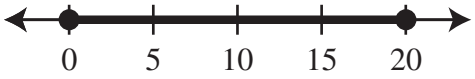
B $\frac{6}{2} = \frac{r}{40}$

C $\frac{6}{4} = \frac{16}{r}$

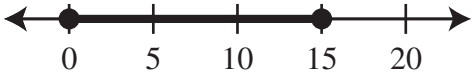
D $\frac{6}{4} = \frac{r}{16}$

29 Mr. Malone will give a total of $20 in allowances to his children this month. He plans to give each of his 2 children at least $5 in allowance. Which graph **best** shows the range of the amount of allowance one child may receive?

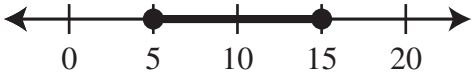
A



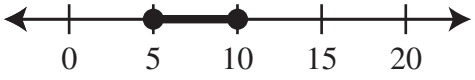
B



C



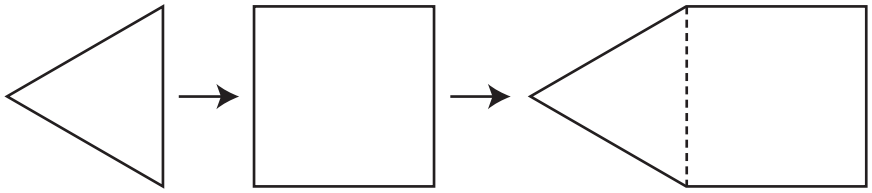
D



Go On

Write your answer to Question 30 on a separate sheet of paper. Be sure to answer Parts A and B.

30 The diagram below models a way to align one side of an equilateral triangle and one side of a square to determine the sum of the measures of the interior angles in a pentagon.



A What is the sum of the measures of the interior angles in a pentagon? Use the diagram or create a different diagram to explain your thinking.

B Jimmy thinks the sum of the measures of the interior angles in a hexagon is found by finding the product of 6×180 . Create a diagram to explain why Jimmy is **incorrect**.

31 Which expression is equivalent to $|-3| - |3|$?

A $3 - 3$
B $-3 - 3$
C $3 + 3$
D $-3 + -3$

Go On

32 The tally table below shows the average number of hours per day that each of 25 students listens to music.

Daily Music Listening

Average Number of Hours per Day	Number of Students
0	|
1	|||
2	
3	𝍸 𝍸 |||
4	𝍸
5	|||

Based on the information in the tally table, exactly how many students listen to music for an average of 4 hours per day?

A 1 student
B 3 students
C 5 students
D 13 students

33 Which length is **closest** in measure to 1 inch?

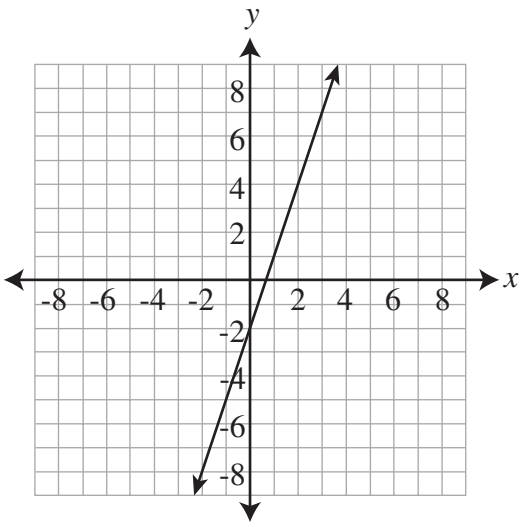
A 1 centimeter
B 1 decimeter
C 1 meter
D 1 millimeter

34 Ashlee received a score of $\frac{21}{25}$ on her math test. What is her score as a percent?

A 0.84%
B 1.19%
C 84%
D 119%

Go On

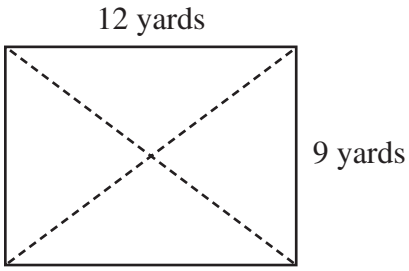
35 The equation $y = 3x - 2$ is graphed on the coordinate plane below.



Which set contains only ordered pairs that are solutions of the equation $y = 3x - 2$?

A {(0, -2), (1, -1), (2, 4)}
B {(1, 1), (0, -1), (-2, -8)}
C {(2, 4), (1, 0), (0, -2)}
D {(3, 7), (1, 1), (-1, -5)}

36 Jesse has a rectangular garden with length 12 yards and width 9 yards. He plans to put a fence around the outer edge of the garden. He will also divide the garden into four sections by putting fence between opposite corners of the garden, as shown by the dashed line segments in the diagram below.



What is the **least** amount of fencing Jesse needs for his garden?

A 57 yards
B 63 yards
C 72 yards
D 84 yards

Go On

37 Four planners projected the growth in a city's population during a 10-year period. Each planner's projection of the amount of growth in the city's population is listed below.

- Planner A: $\frac{1}{3}$
- Planner B: $\frac{2}{5}$
- Planner C: 25%
- Planner D: 37%

At the end of the 10-year period, the actual growth in the city's population was 0.35 . Which planner's projection was **closest** to the actual growth in the city's population?

A planner A
B planner B
C planner C
D planner D

38 The stem-and-leaf plot below shows the scores of 25 students on a 50-point project.

Students' Project Scores

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

Key
5 | 0 = 50

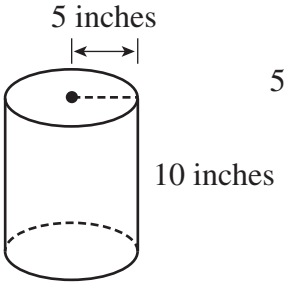
Which score is **most** likely an outlier?

A 11
B 39
C 40
D 50

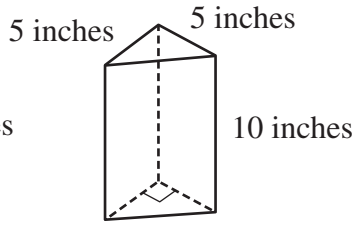
Go On

39 Jerry has two fish tanks. One tank is shaped like a cylinder, and the other tank is shaped like a triangular prism, as shown below.

Tank 1



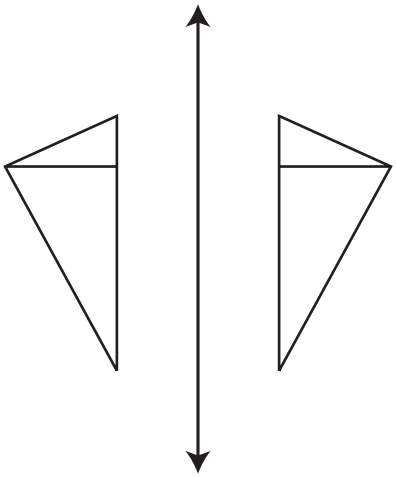
Tank 2



Jerry estimates that the volume of tank 1 is about 750 cubic inches. Which statement **best** compares the volumes of the two fish tanks?

A Tank 2 has about the same volume as tank 1 .
B Tank 2 has about one-third the volume of tank 1 .
C Tank 1 has about twice the volume of tank 2 .
D Tank 1 has about six times the volume of tank 2 .

40 Look at the diagram below.



Which one-step transformation is shown in the diagram?

A reflection
B rotation
C slide
D turn

Go On

Correct Answers for Multiple-choice Items

Item Number	Correct Answer	Content Cluster	Ability Level
1	C	C1	A1
2	B	C3	A2
3	D	C4	A1
4	A	C2	A2
5	C	C1	A1
6	D	C3	A1
7	A	C2	A1
8	B	C3	A3
9	D	C3	A2
10	*	C4	A3
11	C	C1	A2
12	B	C3	A3
13	A	C2	A3
14	D	C4	A2
15	B	C3	A2
16	C	C4	A3
17	B	C2	A1
18	D	C3	A2
19	C	C1	A3
20	A	C3	A3

Item Number	Correct Answer	Content Cluster	Ability Level
21	A	C1	A2
22	D	C3	A1
23	A	C2	A3
24	B	C3	A2
25	C	C1	A3
26	D	C4	A3
27	B	C3	A2
28	D	C3	A1
29	C	C2	A2
30	*	C3	A3
31	A	C1	A2
32	C	C4	A1
33	A	C3	A1
34	C	C1	A2
35	D	C2	A2
36	C	C3	A3
37	A	C1	A3
38	A	C4	A1
39	D	C3	A3
40	A	C3	A1

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

Detailed objectives for Content Standards and Ability Levels can be found on the Nevada Department of Education Website.