8th Grade 2nd Semester PreTest

1.   Fill in the blank.
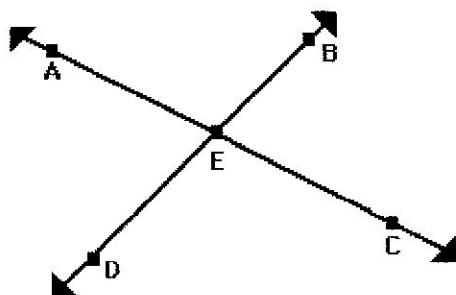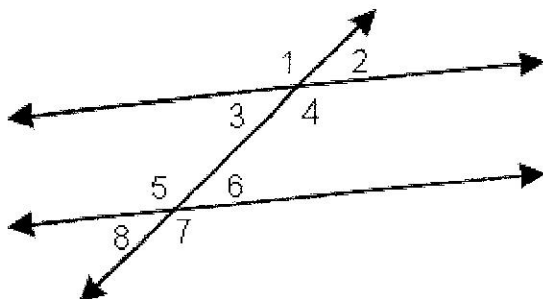

If m∠BEC is equal to 80°, m∠DEC is equal to 100°, and ∠AEC is a straight angle, then ∠BEC and ∠DEA are _____.

     A. complementary angles

     B. supplementary angles

     C. vertical angles

     D. right angles

2.   Lines *m* and *n* are parallel. Find the measure of angle *a*.
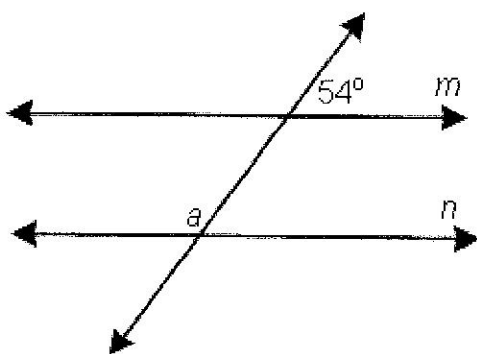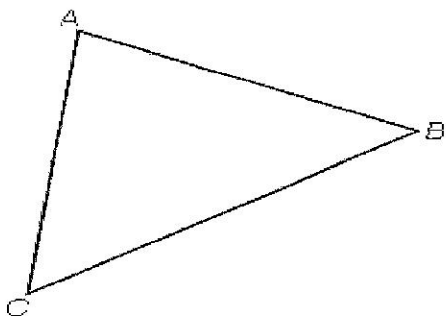

A. 54°

B. 126°

C. 216°

D. 306°

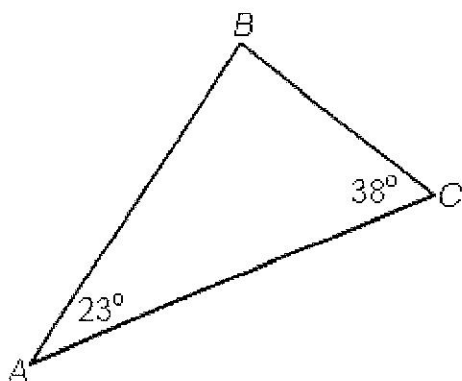3.   Which of the following are alternate interior angles in the diagram below?

A. 3 and 6; 4 and 5

B. 1 and 3; 6 and 7

C. 1 and 4

D. 3 and 7

4.   Which of the following formulas correctly describes the relationship among the angles of triangle *ABC* below?

A. $m\angle A + m\angle B + m\angle C = 90^\circ$

B. $m\angle A + m\angle B + m\angle C = 180^\circ$

C. $m\angle A + m\angle B + m\angle C = 270^\circ$

D. $m\angle A + m\angle B + m\angle C = 360^\circ$

5.   Find the measure of angle *B* in the triangle below.

A. 29°

B. 89°

C. 119°

D. 299°

6.   The length of a line segment located in the first quadrant is 12 units. If the line segment is translated up five units, what is the length of the image of the segment?

A. 7 units

B. 10 units

C. 12 units

D. 17 units

7. Which describes the possible transformations used to create the figure on the right using the figure on the left?
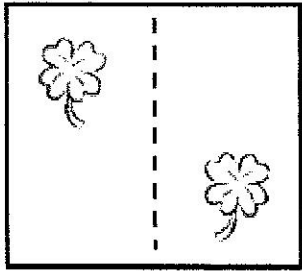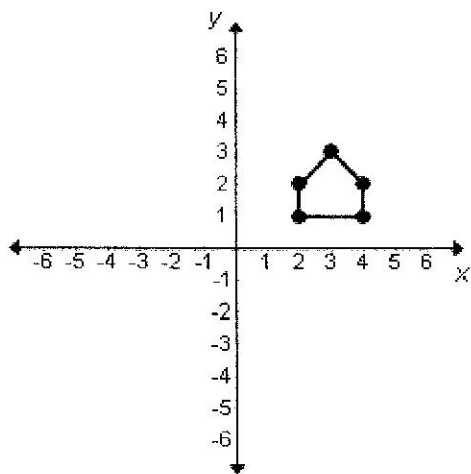

A. a reflection, then translation

B. a reflection, then reflection

C. a translation, then translation

D. a rotation, then translation

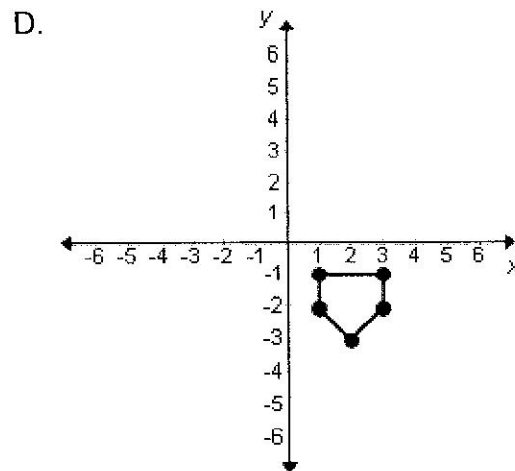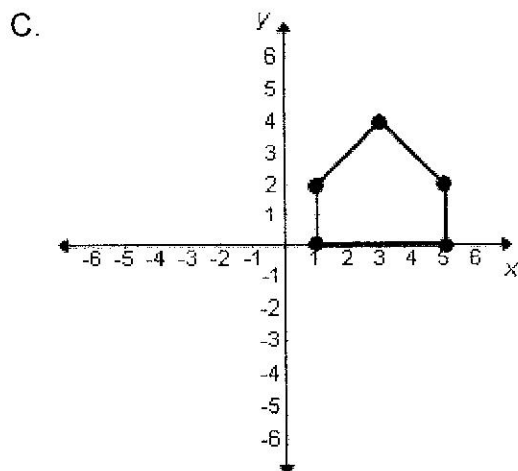8. Determine the new coordinates for point A, if $\triangle ABC$ is translated 2 units to the left and 6 units down.
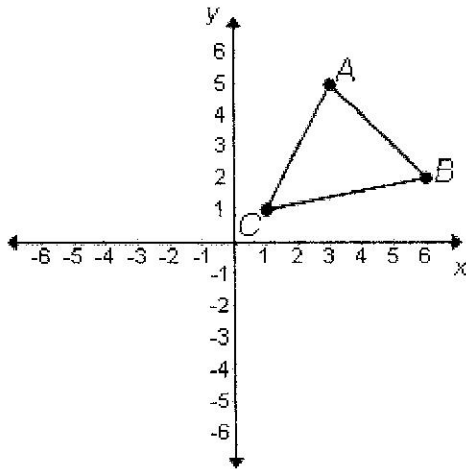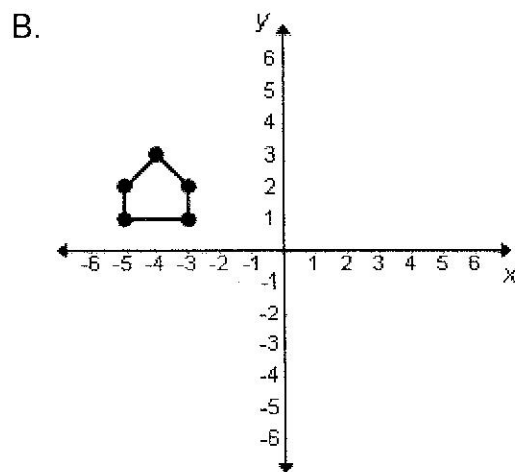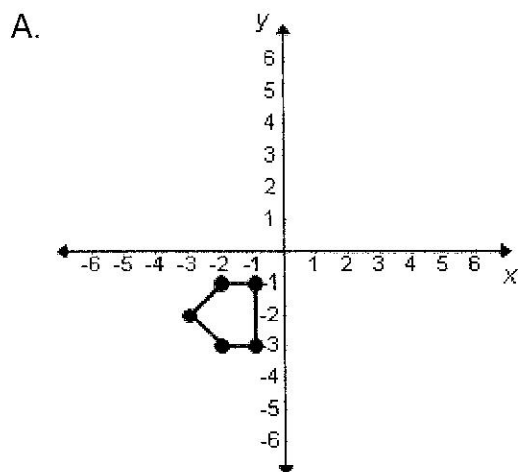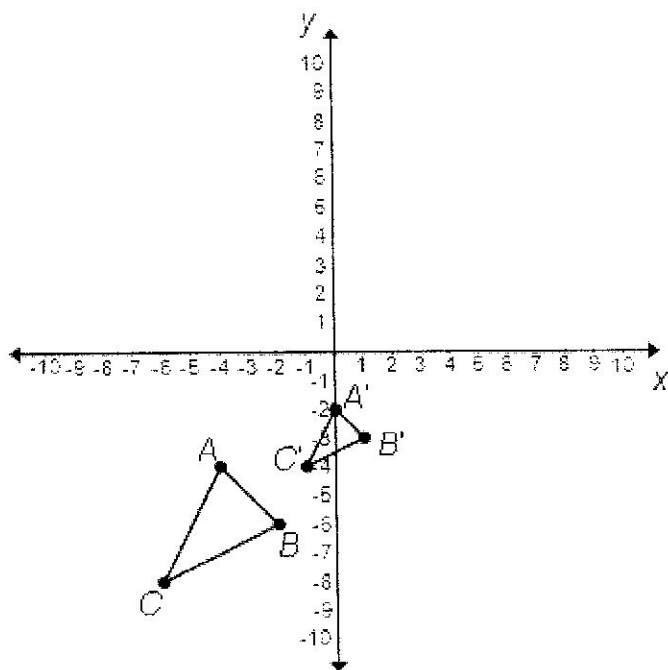

A. (1, 1)

B. (1, -1)

C. (-1, -5)

D. (-3, 3)

9.   Robin draws a house in the shape of a pentagon on the coordinate plane.

If she dilates the figure, which of the following could be the figure?

A.

B.

C.

D.

10. Which sequence of transformations will lead $\triangle ABC$ onto $\triangle A'B'C'$?

A. a translation 4 units left followed by a dilation with a factor of 2 and a center at the origin

B. a translation 4 units left followed by a dilation with a factor of $\frac{1}{2}$ and a center at the origin

C. a translation 4 units right followed by a dilation with a factor of 2 and a center at the origin

D. a translation 4 units right followed by a dilation with a factor of $\frac{1}{2}$ and a center at the origin

11.   Sophia is making a garden in her backyard. She plans to make a diagonal border to separate the garden. The diagram below shows the length and width of the garden.
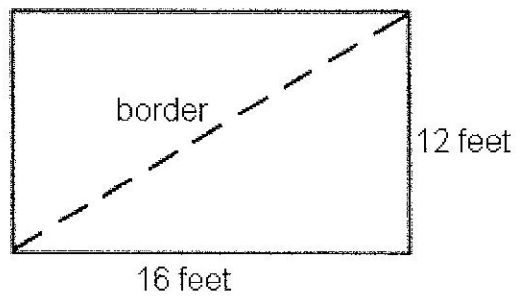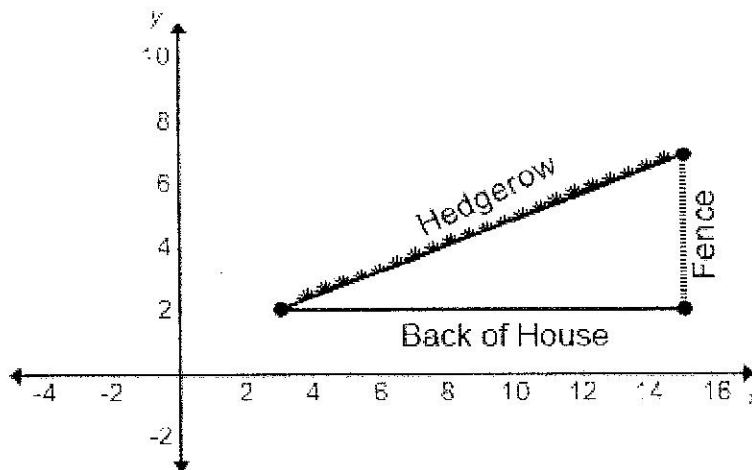

What is the length of the diagonal border?

A. 20 feet

B. 24 feet

C. 28 feet

D. 32 feet

12.   A landscape architect is using a coordinate plane to draft the layout for a new backyard hedgerow. The two ends of the hedgerow are located at (3, 2) and (15, 7). According to the architect's layout, what is the length of the new hedgerow? Use the Pythagorean Theorem.


A. 13 units

B. 5 units

C. 12 units

D. $\sqrt{17}$ units

Version A

13. Find the volume of the cylinder pictured below. Round to the nearest tenth of a cubic inch and use 3.14 for π.

6 in.

10 in.
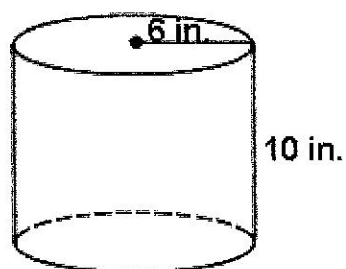
A. 60.0 in^3

B. 188.4 in^3

C. $1,885.0 \text{ in}^3$

D. $1,130.4 \text{ in}^3$

14. What is the **approximate** volume of a cone with a height of 13 in. and radius of 4 in.?

A. 54 in^3

B. 163 in^3

C. 218 in^3

D. 653 in^3

15. Find the volume of the sphere below. Round to the nearest cubic centimeter, and use 3.14 for π.
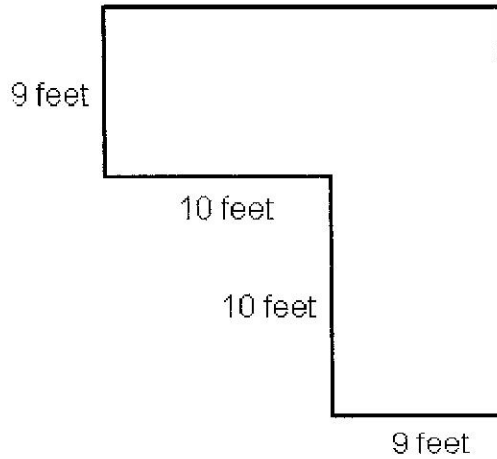

6 cm
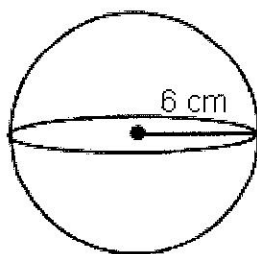
A. 75 cm^3

B. 151 cm^3

C. 678 cm^3

D. 904 cm^3

16. What is the area of a circle with a diameter of 9.2 centimeters?

Round your answer to the nearest hundredth.
- A. 66.44 square centimeters
- B. 265.77 square centimeters
- C. 28.89 square centimeters
- D. 21.16 square centimeters

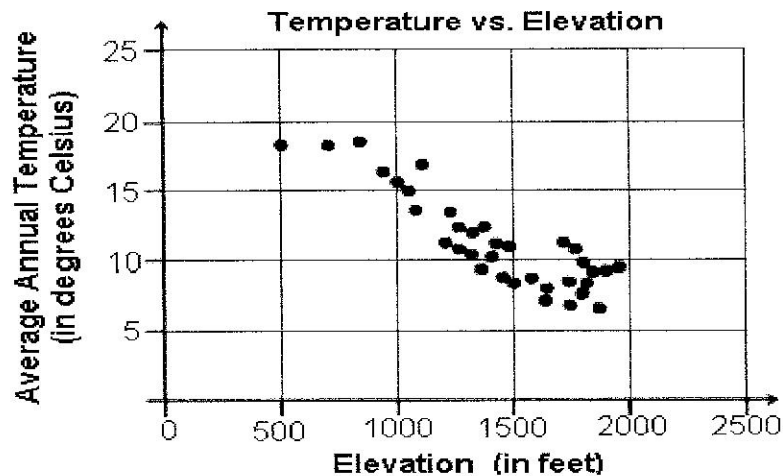17. The floor plan of Kendal's apartment is below.

9 feet

10 feet

10 feet

9 feet

What is the area of the apartment?

- A. 80 ft^2
- B. 180 ft^2
- C. 261 ft^2
- D. 361 ft^2

18.   **The scatter plot below shows the relationship between the average annual temperature and the elevation of a land region.**

**Which of these statements is true based on information from the scatter plot?**

A. The average annual temperature increases when the elevation increases.

B. The average annual temperature decreases when the elevation increases.

C. The average annual temperature becomes stable after the elevation of 1,000 feet.

D. The average annual temperature decreases when the elevation decreases.

19.   **The manager of a theater records the number of empty seats over a period of time and plots them in the following graph.**
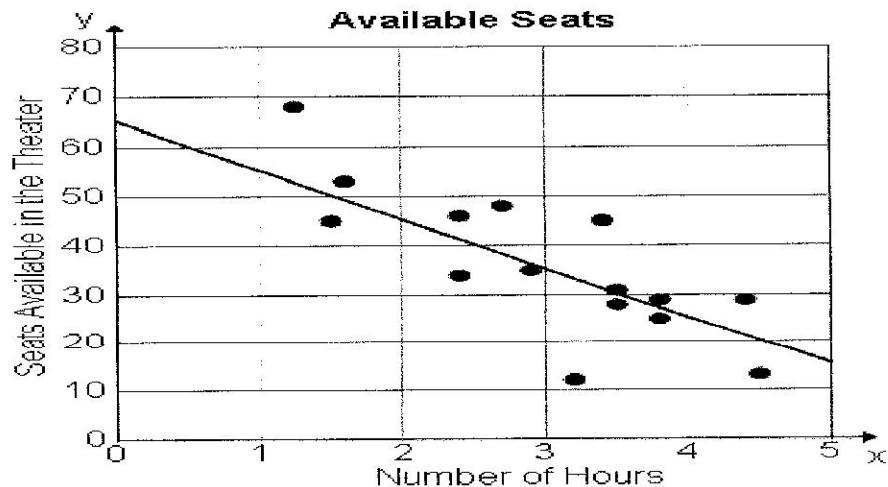
Which of the following statements correctly describes the graph?

A. There is no correlation.

B. There is a positive correlation.

C. There is a negative correlation.

D. There is not enough information to draw a conclusion.

20.   Which of the following graphs represents the line of best fit for the scatter plot?

A.

B.

C.

D.
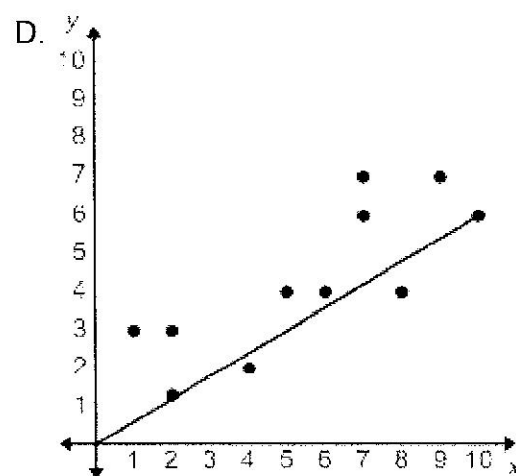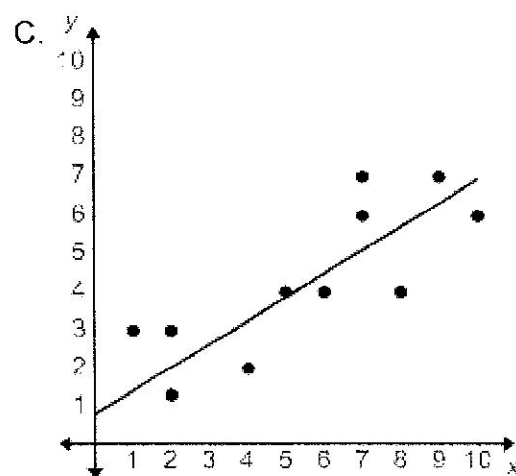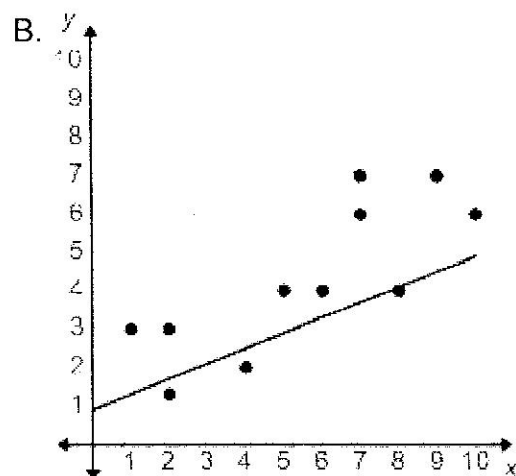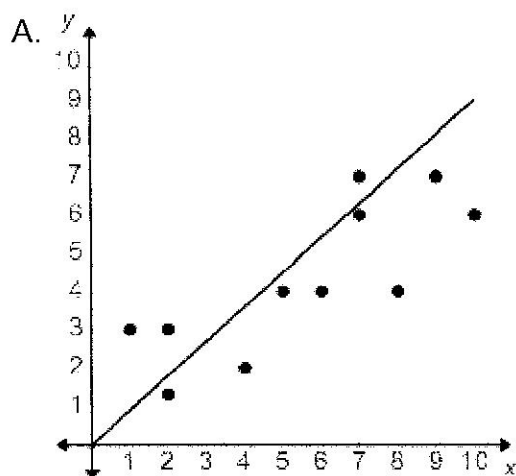
21.   Which data set would <u>best</u> be modeled by a linear function?

A.

B.

C.

D.

22.

Water Intake While Exercising
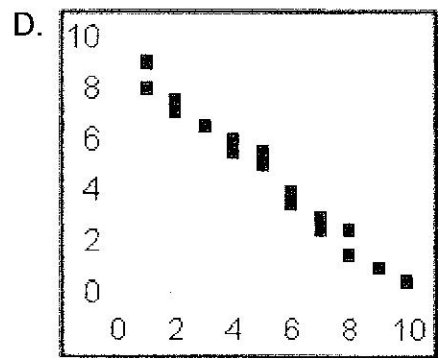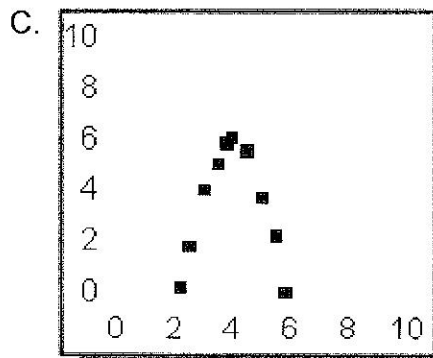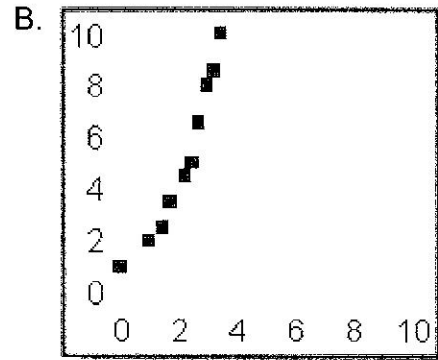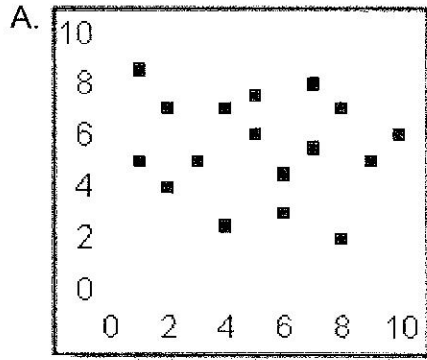
The following graph shows the amount of water people drink while exercising, compared to the amount of time they spend exercising. Based on this graph, which statement is the best approximation describing the change in water intake for every 15 minutes of exercise?
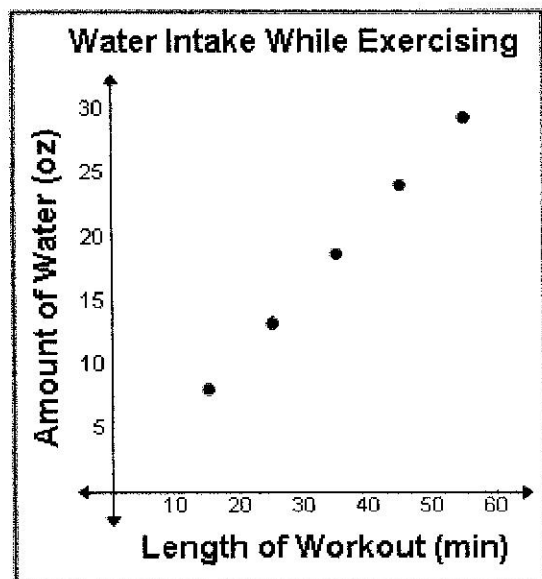
A. Water intake increases by 4 ounces.

B. Water intake decreases by 8 ounces.

C. Water intake increases by 8 ounces.

D. Water intake decreases by 4 ounces.

23. The graph below shows the amount of money a moving company charges a person to rent a truck. The company charges a flat rate plus an amount per mile driven in town. Based on the graph, what is the best estimate for the flat rate for renting a truck?

Renting a Moving Truck

A. $5

B. $25

C. $35

D. $50

Price ($)

Distance Traveled (miles)
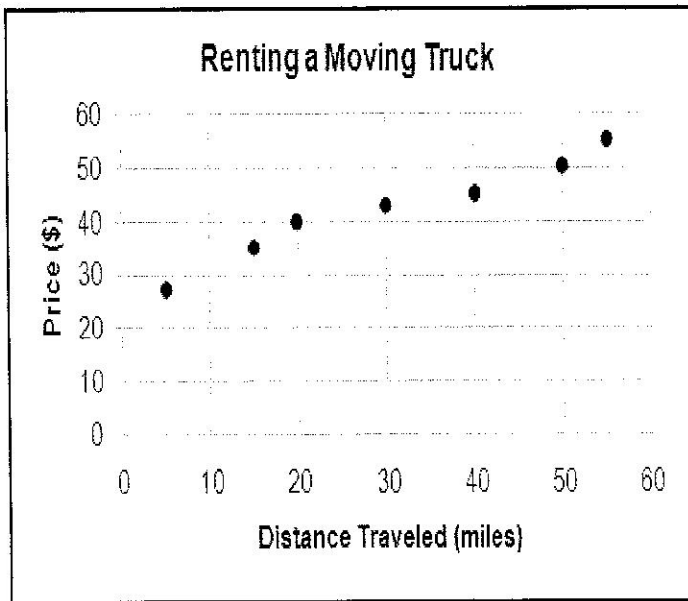
24.   A pet store surveys pet owners to see if there is a relationship between owning a dog and owning a cat. Based on the data table below, which statement is true?

Pet Owner	Dog	Cat
1	N	Y
2	N	N
3	Y	Y
4	Y	N
5	Y	N
6	N	Y
7	Y	N
8	Y	N
9	Y	N
10	Y	Y
11	N	N
12	Y	N
13	N	Y
14	Y	N
15	N	N

A. Most pet owners who own a dog, do not own a cat.

B. Most pet owners who own a dog also own a cat.

C. Most pet owners who do not own a dog, own a cat.

D. Most pet owners who do not own a dog, do not own a cat.

25. In the 1984 election, out of a sample of 100 male voters, 62 reported voting for the Republican candidate, Ronald Reagan. Of a sample of 100 female voters, 44 reported voting for the Democratic candidate, Walter Mondale. Which two-way table represents this sample of voters?

A.

	Republican	Democrat
Male	62	38
Female	56	44

B.

	Republican	Democrat
Male	62	56
Female	38	44

C.

	Republican	Democrat
Male	44	62
Female	52	48

D.

	Republican	Democrat
Male	44	38
Female	56	62