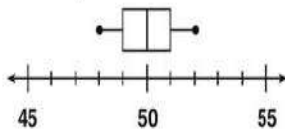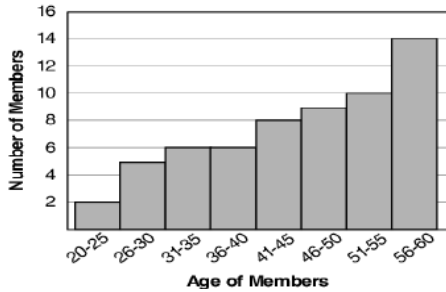1. Judy recorded the low temperatures at Clear Lake for ten days in May. She made the box-and-whisker plot to display her data. Which value defines the upper quartile of the temperatures?

    Low Temperatures at Clear Lake

    A. 49   B. 50   C. 51   D. 52

2. The histogram below shows the ages of the members of a club. Which of these **correctly** describes the data shown in the histogram?

    A.

    The club is more desirable to an older audience because the data are skewed t

    B.

    The club is more desirable to an older audience because the data are skewed t

    C.

    The club is equally desirable to all age groups because the data are uniformly

    D.   The club is equally desirable to all age groups because the data are symmetric

3. A survey was conducted among a group of college students to find the amount of time they spend online every day. The results are shown below. What is the conditional relative frequency, to the nearest hundredth, of the girls who spend less than 3 hours online each day?

    TIME SPENT ONLINE

Time	Girls	Boys	Total
Less than 3 hours	26	42	68
3 Hours or more	14	35	49
Total	40	77	117

    A. 0.22   B. 0.26   C. 0.38   D. 0.65

4. The life of a AA battery can be predicted by the number of hours of use. As the number of hours of use increases, the remaining battery power decreases. The linear association is demonstrated in the scatter plot below.
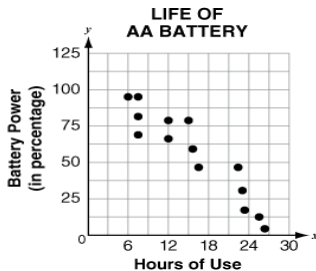
    If Tyler used 20% of the battery power in his AA battery, for approximately how many hours has he used the battery?

    A.   6 hours   B. 24 hours   C. 27 hours   D. 40 hours

5. The coach of a college athletics team studied the impact of different brands of shoes on the running times of his students. He concluded that a change in the brand of shoes used results in a reduction of the time it takes a runner to run a given distance. Which statement is **true**?

    A. His conclusion represents correlation and causation
    B. His conclusion represents correlation but no causation.
    C. Because the running time decreases, the change in the brand and running time are not correlated.

D. Because the change in brand causes a change in running time, his conclusion represents causation but not correlation.
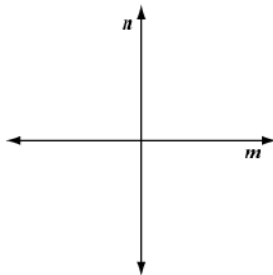
6. Regular pentagon JKLMN is shown with the center located at point H.
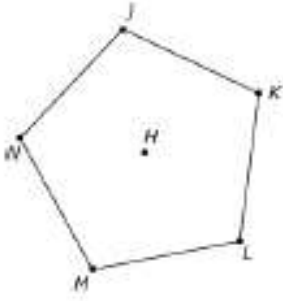
What rotation, about the center, would produce an image that would map directly onto pentagon JKLMN?

7. If <A and <B are a linear pair and m<A = 2x + 15 and m <B = 3x + 35, What is the measure of angle A?

8. In the figure below, line *m* and line *n* create four 90° angles. Which of these **best** describes the lines *m* and *n*?

A. Perpendicular lines
B. Intersecting lines
C. Parallel lines
D. Tangent Lines

9. A rectangle is shown on the coordinate plane below. Identify a line that the rectangle could be reflected over to result in a rectangle that has the same vertices as the original.
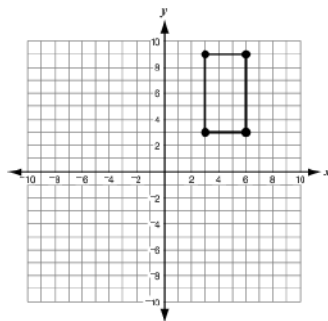
A. y = 6
B. x = 6
C. y = 4
D. x = 4

10. The length of a rectangle is 4 times its width. The perimeter is 60 inches. What is the length?

11. How many ounces of a 30% acid solution should Jill mix with 50 ounces of a 70% acid solution to make a 40% acid solution?

12. A bag containing 15 ounces of mixed nuts contains 40% cashews. Liam adds 45 ounces of mixed nuts containing 60% cashews to the bag. What percent of the mixed nuts in the bag is cashews?

13. During the first hour of sales, 400 circus tickets were sold, some at $12 per ticket and some at $15 per ticket. The total amount collected from sales during that hour was $5550. Which system of equations can be used to find x, the number of $12 tickets, and y, the number of $15 tickets sold?

14. The park in Springtown has a 2.13 km hiking trail. How many miles long is the hiking trail? (1 meter = 3.28 feet, 5280 feet = 1 mile)

15. Manuel has a bowl of quarters and dimes. There are 45 coins totaling $8.85. To find the number of each coin, Manuel used a system of linear equations and graphed them in the coordinate plane. Based on the graph, about how many quarters are in the bowl?
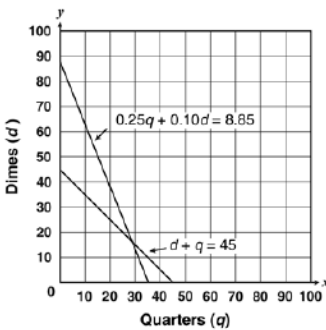
16. Brenda had a total of $7,350 invested in two accounts. The first account earned 6% simple interest. The second account earned 10% simple interest. At the end of the year, the two accounts had earned Brenda a total of $555 in interest. The graph shows this relationship.

Based on the graph, about how much was invested at each rate?
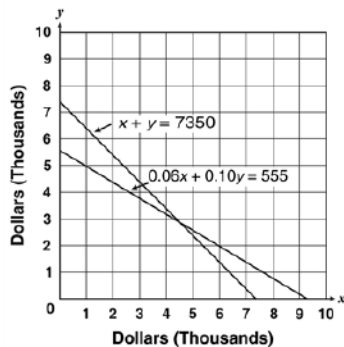
17. Solve this system for x and y of equations by the elimination method.

5x+y=9

10x-7y=18