

Diocese of Davenport



11th Grade

Math Assessment

2009

DIRECTIONS:

The following test has multiple choice questions.

Read the story and then on the multiple choice questions please review all of the choices and select the one you think best answers the question.

SAMPLE QUESTION:

1. Which of these would you find growing in a desert?
- A. A maple tree
 - B. A dandelion
 - C. A cactus
 - D. A corn plant

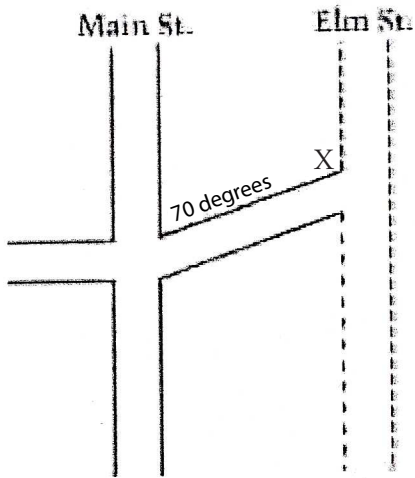
SAMPLE

Please completely fill in the circles that best represent your responses. Fill in marks like this: ● not like this: ⊗

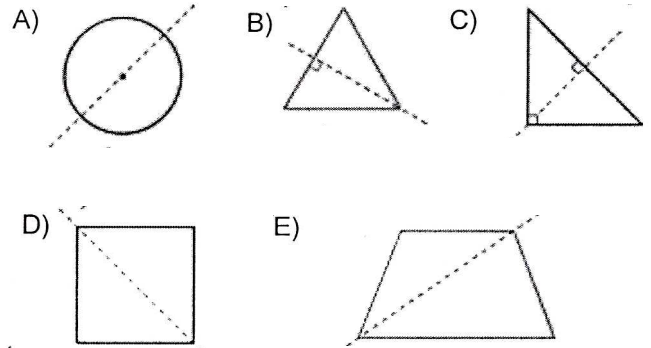
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| 1. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D | 34. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D | 67. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D |
| 2. | <input type="radio"/> A | <input type="radio"/> B | <input checked="" type="radio"/> C | <input type="radio"/> D | 35. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D | 68. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D |
| 3. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D | 36. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D | 69. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D |
| 4. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D | 37. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D | 70. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D |
| 5. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D | 38. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D | 71. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D |
| 6. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D | 39. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D | 72. | <input type="radio"/> A | <input type="radio"/> B | <input type="radio"/> C | <input type="radio"/> D |

CODES:

| | |
|---------------------------|----|
| Bettendorf Lourdes | 01 |
| Burlington Notre Dame | 02 |
| Clinton Prince of Peace | 04 |
| Dav. Assumption | 05 |
| Dav. All Saints | 06 |
| Dav. JFK | 07 |
| Dav. St. Paul the Apostle | 08 |
| DeWitt St. Joseph | 09 |
| Holy Trinity | 10 |
| Iowa City Regina | 11 |
| Keokuk Catholic | 12 |
| Muscatine Bish. Hayes | 13 |
| Ottumwa Seton | 14 |
| Washington St. James | 15 |



5. In which of the following figures is the dashed line NOT a line of symmetry?



1. In the figure above, Elm Street is to be constructed parallel to Main Street. What is the value of x ?

- A. 70
- B. 110
- C. 120
- D. 130
- E. 40

2. A triangle that has sides with lengths 6, 6, and 10 is called

- A. acute
- B. right
- C. scalene
- D. isosceles
- E. equilateral

3. $3 + 15 \div 3 - 4 \times 2 =$

- A. -9
- B. -2
- C. 0
- D. 4
- E. 5

4. Which of the following is NOT a property of every rectangle?

- A. The opposite sides are equal in length.
- B. The opposite sides are parallel.
- C. All angles are equal in measure.
- D. All sides are equal in measure.
- E. The diagonals are equal in length.

6. 4, 8, 3, 2, 5, 8, 12

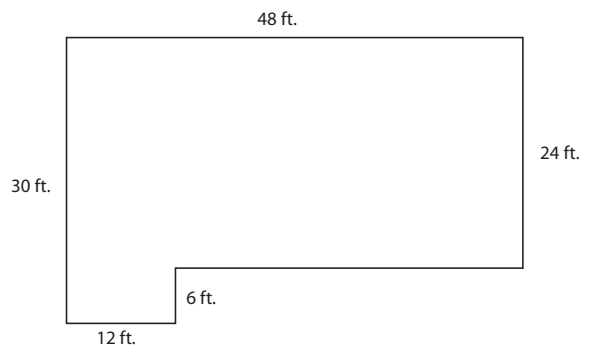
Which is the median of the numbers above?

- A. 4
- B. 5
- C. 6
- D. 7
- E. 8

7. Which of the following is both a multiple of 3 and a multiple of 7?

- A. 7,007
- B. 8,192
- C. 21,567
- D. 22,287
- E. 40,040

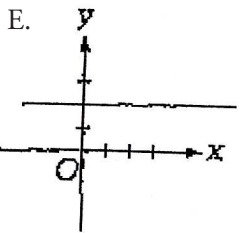
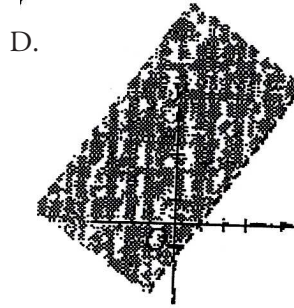
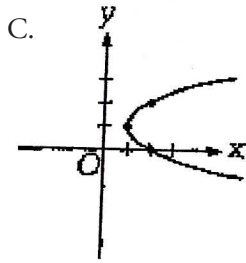
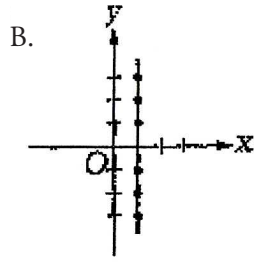
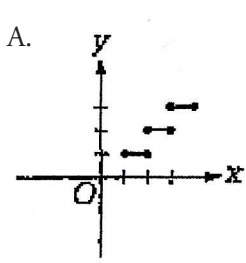
8. The diagram is part of a scale drawing of a house.



Which is the length, in feet, of the side whose dimension is not given in the diagram?

- A. 12
- B. 24
- C. 30
- D. 36
- E. 40

9. Which of the following could be the graph of a function?



10. $x + 2y = 17$

$x - 2y = 3$

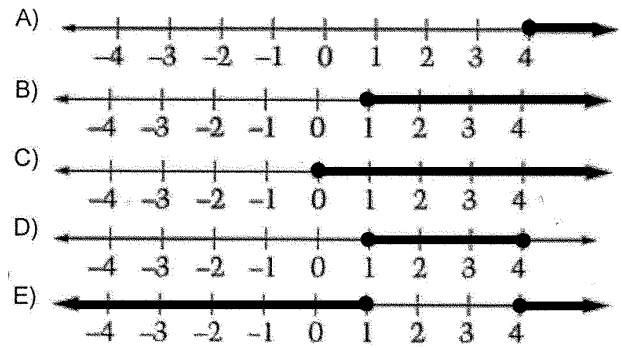
The graphs of the two equations shown above intersect at the point (x, y) . What is the value of x at the point of intersection?

- A. $3\frac{1}{2}$
- B. 5
- C. 7
- D. 10
- E. 20

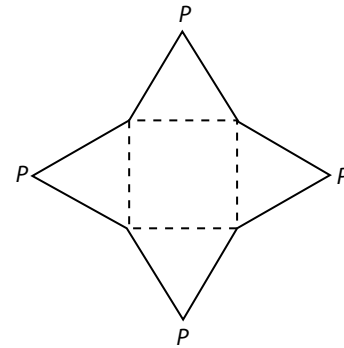
11. In a school fund-raiser, 10 students in class A sold an average (arithmetic mean) of 4 boxes of cookies. In class B, 15 students sold an average of 9 boxes. What was the average number of boxes of cookies sold by the 25 students?

- A. $1\frac{3}{15}$
- B. 1
- C. $6\frac{1}{2}$
- D. 7
- E. $13\frac{4}{13}$

12. Which of the following is the graph of $|2x - 5| \geq 3$?



13.



If the figure above is folded on the dotted lines so that all the points labeled P touch each other, what three-dimensional figure will result?

- A. Triangle
- B. Square
- C. Cube
- D. Pyramid
- E. Tetrahedron

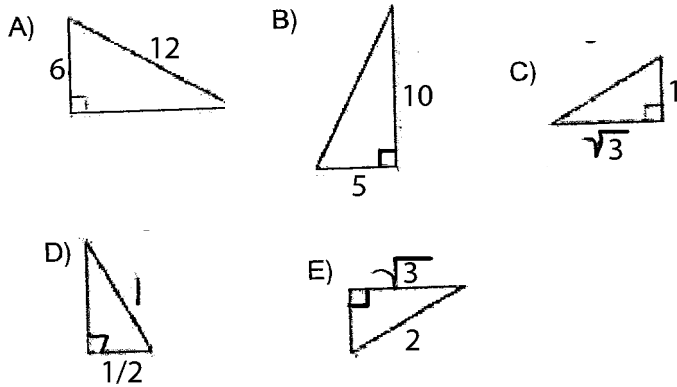
14. $x + 2y = 1$

$2x - y = 7$

In the solution of the system of equations above, what is the value of x ?

- A. -1
- B. 2
- C. 3
- D. 4
- E. 5

15. Which of the right triangles below could NOT be a 30°, 60°, 90° triangle?



16. The diameter of a red blood cell, in inches, is 3×10^{-4} . This expression is the same as which of the following numbers?
- A. 0.00003
 - B. 0.0003
 - C. 0.003
 - D. 3,000
 - E. 30,000

17.

| x | y |
|-----|-----|
| 0 | -3 |
| 1 | -1 |
| 2 | 1 |

Which of the following equations is true for the three pairs of x and y values in the table above?

- A. $3x + 2 = y$
 - B. $3x - 2 = y$
 - C. $2x + 3 = y$
 - D. $2x - 3 = y$
 - E. $x - 3 = y$
18. Of the following, which is the closest approximation of a 15 percent tip on a restaurant check of \$24.99?
- A. \$2.50
 - B. \$3.00
 - C. \$3.75
 - D. \$4.50
 - E. \$5.00

19. Which of the following ordered pairs (x, y) is a solution to the equation $2x - 3y = 6$?

- A. (6, 3)
- B. (3, 0)
- C. (3, 2)
- D. (2, 3)
- E. (0, 3)

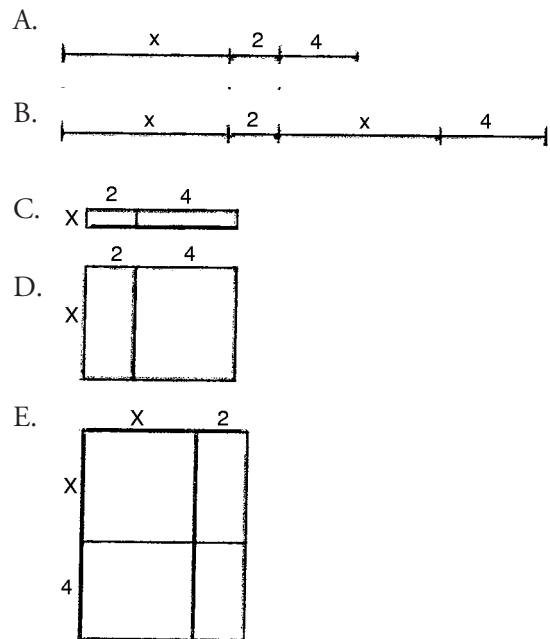
20. One store, Price Pleasers, reduces the price each week of a \$100 stereo by 10 percent of the original price.

Another store, Bargains Plus, reduces the price each week of the same \$100 stereo by 10 percent of the previous week's price.

After 2 weeks, how will the prices at the two stores compare?

- A. The price will be cheaper at Price Pleasers.
- B. The price will be the same at both stores.
- C. The price will be cheaper at Bargains Plus.
- D. Both will still cost \$100.
- E. Both will be half price.

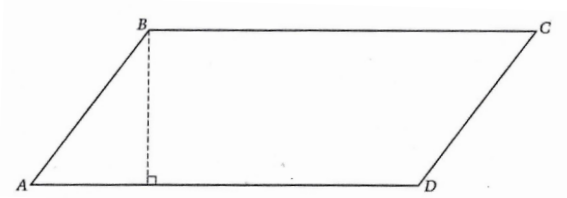
21. Which of the following best illustrates a geometric representation of $(x + 2)(x + 4)$?



22. If the digit in the tens place of 37, 241 is increased by one and the digit in the thousands place is decreased by one, how has the number been changed?

- A. The number has been decreased by 990.
- B. The number has been decreased by 1,000.
- C. The number has been decreased by 1,010.
- D. The number has been increased by 10.
- E. The number has been increased by 1,010.

23.



Use your centimeter ruler to help answer this question.

Of the following, which is closest to the area of parallelogram $ABCD$ above?

- A. 5 square centimeters
 - B. 10 square centimeters
 - C. 20 square centimeters
 - D. 25 square centimeters
 - E. 52 square inches
24. Easy Ride Van Company finds that about 40 percent of the time a person who makes an advance reservation for transportation does not keep the reservation. Therefore, for each of their 10-passenger vans, the Easy Ride Van Company schedules 13 persons on the basis of advance reservations.

Based on the information above, about how many riders out of the 13 scheduled would NOT keep their reservations?

- A. 1
- B. 3
- C. 5
- D. 7
- E. 9

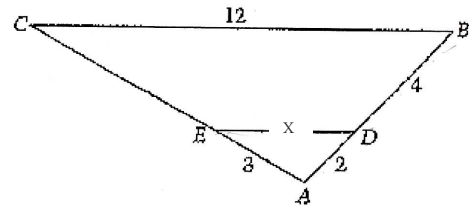
25. $\frac{6 \times 10^3}{3 \times 10^5} =$

- A. 0.5×10^2
- B. 2×10^2
- C. $2 \times 10^{0.6}$
- D. 0.5×10^{-2}
- E. 2×10^{-2}

26. If $f(x) = 4x^2 - 7x + 5.7$, what is the value of $f(3.5)$?

- A. 5.7
- B. 152.7
- C. 30.2
- D. 12.25
- E. 24.5

27.



If triangles ADE and ABC shown in the figure above are similar, what is the value of x ?

- A. 4
- B. 5
- C. 6
- D. 8
- E. 10

28. Luis mixed 6 ounces of cherry syrup with 53 ounces of water to make a cherry-flavored drink. Martin mixed 5 ounces of cherry syrup with 42 ounces of water. Who made the drink with the stronger cherry flavor?

- A. Luis
- B. Martin
- C. Both equal
- D. Rowen
- E. Not possible to calculate from the given data.

29. The lowest point of the St. Lawrence River is 294 feet below sea level. The top of Mt. Jacques Cartier is 1,277 feet about sea level. How many feet higher is the top of Mt. Jacques Cartier than the lowest point of the St. Lawrence River?

- A. 983 ft.
- B. 1,571 ft.
- C. 1,277 ft.
- D. -983 ft.
- E. None of these

30. A certain machine produces 300 nails per minute. At this rate, how long will it take the machine to produce enough nails to fill 5 boxes of nails if each box will contain 250 nails?

- A. 4 minutes
- B. 4 minutes 6 seconds
- C. 4 minutes 10 seconds
- D. 4 minutes 50 seconds
- E. 5 minutes

31. Length can be measured to within 0.05 centimeter accuracy by using a certain type of measuring instrument. A reading of 3.7 centimeters on this instrument means that the actual length is at least:

- A. 3.20 centimeters
- B. 3.65 centimeters
- C. 3.69 centimeters
- D. 3.70 centimeters
- E. 3.75 centimeters

32. Sequence I: 3, 5, 9, 17, 33, ...

Sequence I, shown above, is an increasing sequence. Each term in the sequence is greater than the previous term.

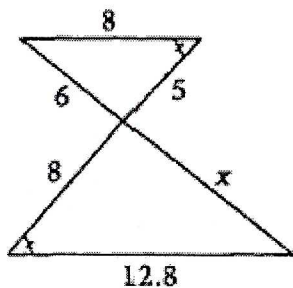
If this same pattern of differences continues in the above terms in Sequence I, what are the next terms after 33 in Sequence I?

- A. 55
- B. 50
- C. 64
- D. 65
- E. 66

33. Write an algebraic expression (rule) that can be used to determine the n th term of Sequence 2, which is the difference between the $(n + 1)$ st term and the n th term of Sequence I:

- A. $2^{(n+1)} + 1$
- B. $2^{(n+1)}$
- C. $2(n + 1) - 1$
- D. $2n + 1$
- E. $2^{(n+1)} - 1$

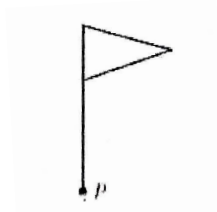
34.



In the figure above, the two triangles are similar. What is the value of x ?

- A. $\frac{6 * 5}{8}$
- B. $\frac{6 * 8}{5}$
- C. $\frac{8 * 12.8}{6}$
- D. $\frac{8 * 5}{6}$
- E. $\frac{6 * 12.8}{8}$

35.



The figure above will be rotated clockwise 180 degrees about point P . Which of the following will be its position after the rotation?

- A.
- B.
- C.
- D.
- E.

36. A triangle has two sides, each of length 8 centimeters, and the angle formed by these two sides measures 40 degrees.

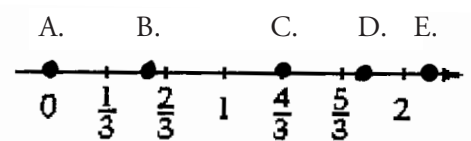
What is the measure of one of the other two angles of the triangle?

- A. 40 degrees
- B. 140 degrees
- C. 100 degrees
- D. 70 degrees
- E. 20 degrees

37. If a 2 by 18 rectangle has the same area as a square, what is the length of a side of the square?

- A. 4
- B. 6
- C. 8
- D. 10
- E. 12

38. On the number line below, choose a dot at the point that could represent 1.75



39. What is the distance between the points $(2, 10)$ and $(-4, 2)$ in the xy -plane?
- A. 6
 - B. 8
 - C. 10
 - D. 14
 - E. 18
40. What is the least whole number x for which $2x$ is greater than 11?
- A. 5
 - B. 6
 - C. 9
 - D. 22
 - E. 23
41. A cereal company packs its oatmeal into cylindrical containers. The height of each container is 10 inches and the radius of the bottom is 3 inches. What is the volume of the box to the nearest integer? (The formula for the volume of a cylinder is $v = \pi r^2 h$.)
- A. 270 cubic inch
 - B. 270 square inch
 - C. 283 cubic inch
 - D. 283 square inch
 - E. 89 cubic inch
42. Pencils sell individually for \$0.07 each or in packs of 12 for \$0.79 per pack. What is the total saved when 24 pencils are purchased by the pack instead of individually?
- A. \$0.01
 - B. \$0.05
 - C. \$0.10
 - D. \$0.72
 - E. \$1.44
43. Consider the statement "if n is an even number, then n is two times an odd number." For which of the following values of n is the statement FALSE?
- A. 2
 - B. 6
 - C. 8
 - D. 10
 - E. 14