meap

Michigan Educational Assessment   Program

Released Items
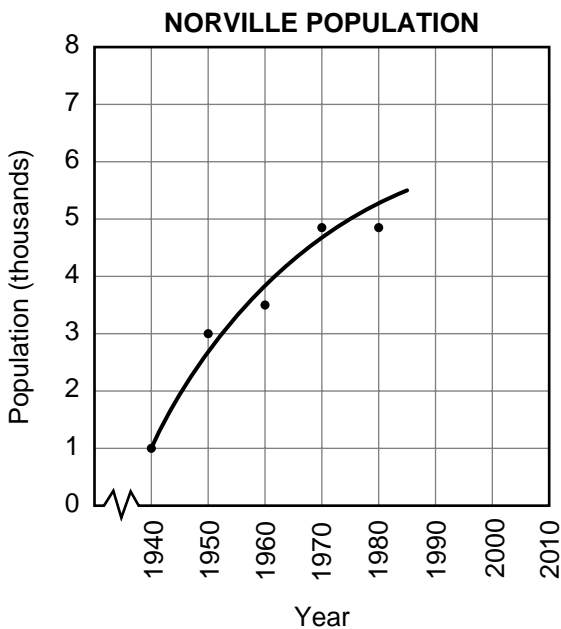
from the

HST in Math Assessment

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1   The population growth of Norville is shown on the graph below. The points on the graph show the town's population for 1940 to 1980.

NORVILLE POPULATION

A best-fit curve of the population growth has been added to the graph. Based on the continuation of the curve shown, which of the following is the **BEST** prediction of Norville's population in the year 2010?

A   2500 to 4000

B   4000 to 5500

C   5500 to 7000

D   7000 to 8500

2   Carlos started driving at 11:00 A.M., and reached his destination at 1:30 P.M. If his average speed was 60 miles per hour, how far did Carlos travel?

A   90 miles

B   150 miles

C   570 miles

D   970 miles

3   Which of the following statements must **ALWAYS** be true?

A   The upper quartile is always greater than or equal to the mean.

B   The upper quartile is always greater than or equal to the median.

C   The median is always greater than or equal to the mean.

D   The mean is always greater than or equal to the median.

4   Bricks were stacked in the pattern shown below. If the pattern continued and there were 49 bricks in all, how many bricks would be on the bottom row?
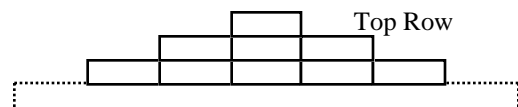

A   11   B   12

C   13   D   14

5   A student clean-up committee collected 120 empty drink containers. There were three times as many of the 5¢ deposit containers as 10¢ deposit containers. How many 10¢ deposit containers were collected?

A   30   B   40

C   60   D   90

6   To estimate the total number of trout in a lake, the Department of Natural Resources catches 200 trout, tags them, and returns them to the lake. After one week, 200 more trout are caught. If 8 of these trout are found to be tagged, which of the following is the **BEST** approximation of the total number of trout in the lake?

   A   1,600   **B**   5,000

   C   40,000   **D**   320,000

7   A coin purse contains one penny, one nickel, one dime, and two quarters. There is a probability of zero that two coins taken at random will have a total value of _____.

   A   11¢   **B**   13¢

   C   15¢   **D**   26¢

8   If the volume of a cube with side s is 64 cubic centimeters, what is the surface area of the cube?

s
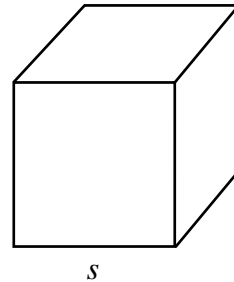
   A   48 cm^2 **B**   64 cm^2
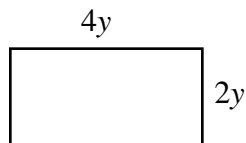
   C   96 cm^2 **D**   144 cm^2

9   Which of the following line graphs would **BEST** represent the relationship between a person's age and height?
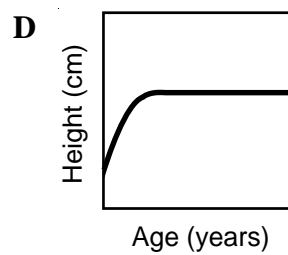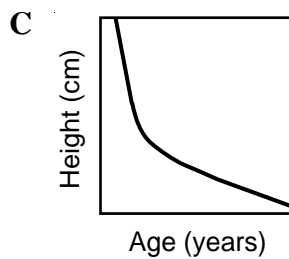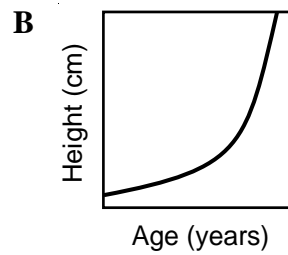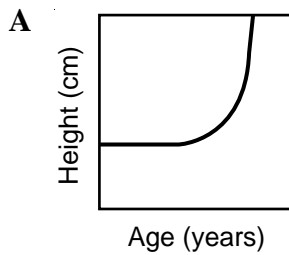
10   Which expression represents the area of a rectangle with the dimensions shown in the figure?

     A $8y^2$

     B $12y^2$

     C $12y$

     D $8y$

11   When Vita delivers newspapers she rides her bike one mile east, two miles south, two miles east, and then two miles south. If Vita can ride directly home along a straight line at the end of her route, how far must she ride to return to her starting point?

     A   4 miles   **B**   5 miles

     C   7 miles   **D**   8 miles

12   Class begins at 8:15 A.M. If Paul needs 35 minutes to walk to school and 5 minutes to go to his locker before entering class, what is the latest time he can leave his house without being late?

     A   7:35 A.M.   **B**   7:40 A.M.

     C   8:35 A.M.   **D**   8:55 A.M.

13   A store owner is trying to sell a TV set originally priced at $450. The owner marks the price up 20% and then advertises a 20% sale on the marked-up price. What is the final price of the TV set?

    A $360   **B** $432

    C $450   **D** $540

14   What is the perimeter of quadrilateral EFGH?
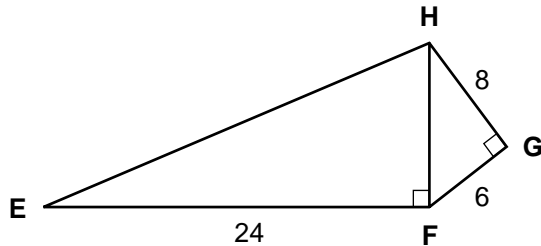
    A 62   **B** 64

    C 68   **D** 72

15   In a class of s students, 10 received a grade of A and 16 received a grade of B. If a student is chosen at random, which expression gives the probability that the student received **NEITHER** an A nor a B?

    A $\dfrac{6}{s}$ **B** $\dfrac{10}{16}s$

    C $\dfrac{s-26}{s}$ **D** $\dfrac{26}{s}$

16   The equation for the curve shown in Figure 1 is $y = x^2$. Which of the following equations **BEST** represents the curve shown in Figure 2 ?
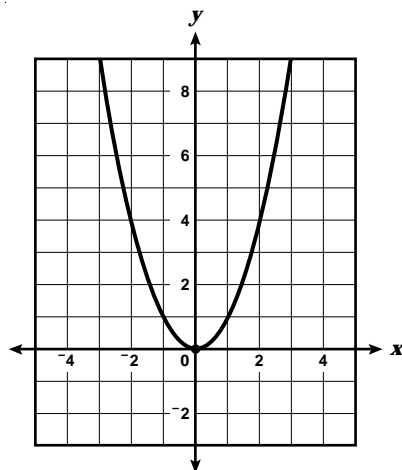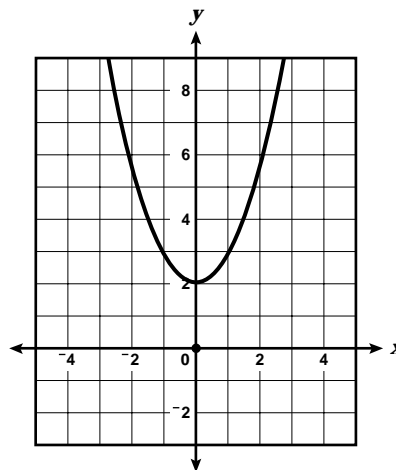

Figure 1

Figure 2

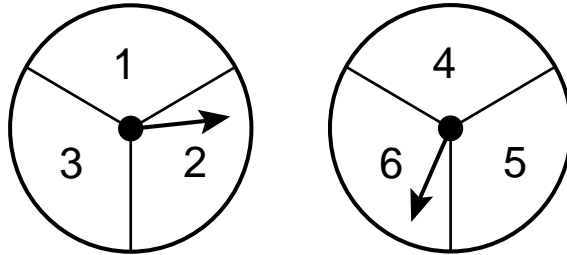**A** $y = \dfrac{x^2}{2}$ **B** $y = 2x^2$ **C** $y = x^2 + 2$ **D** $y = x^2 - 2$

Selected Response Answer Key

1	C
2	B
3	B
4	C
5	A
6	B
7	B
8	C
9	D
10	A
11	B
12	A
13	B
14	B
15	C
16	C
17	Constructed Response

17   **(4 Points)**

In a game at the school carnival, you spin each spinner one time and then add the two numbers the arrows land on. The sum of the numbers determines your prize.

A   Make a table listing all of the possible spinner results and the sums that could appear.

B   What is the probability that the sum is an even number? Justify your answer. You may use your list from Part A to support your answer.