



2009 AMC 8

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Question 1

Not yet answered

Points out of 1

Bridget bought a bag of apples at the grocery store. She gave half of the apples to Ann. Then she gave Cassie 3 apples, keeping 4 apples for herself. How many apples did Bridget buy?

(A) 3 (B) 4 (C) 7 (D) 11 (E) 14

Select one:

- A
- B
- C
- D
- E

Question 2

Not yet answered

Points out of 1

On average, for every 4 sports cars sold at the local dealership, 7 sedans are sold. The dealership predicts that it will sell 28 sports cars next month. How many sedans does it expect to sell?

(A) 7 (B) 32 (C) 35 (D) 49 (E) 112

Select one:

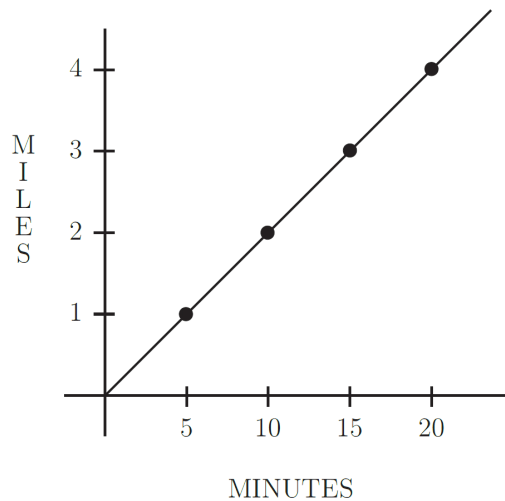
- A
- B
- C
- D
- E

Question 3

Not yet answered

Points out of 1

The graph shows the constant rate at which Suzanna rides her bike.



If she rides a total of a half an hour at the same speed, how many miles would she have ridden?

- (A) 5 (B) 5.5 (C) 6 (D) 6.5 (E) 7

Select one:

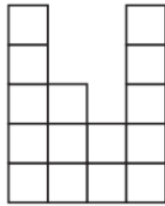
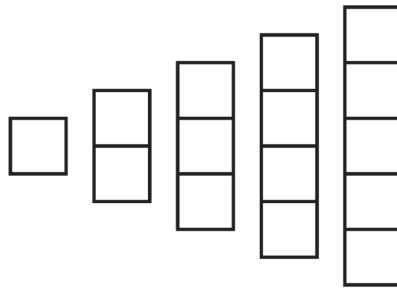
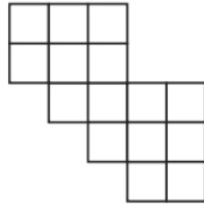
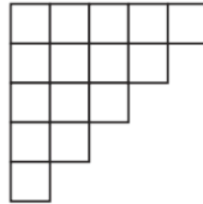
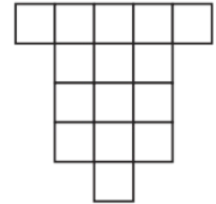
- A
- B
- C
- D
- E

Question 4

Not yet answered

Points out of 1

The five pieces shown below can be arranged to form four of the five figures shown in the choices. Which figure **cannot** be formed?

**(A)****(B)****(C)****(D)****(E)**

Select one:

- A**
 B
 C
 D
 E

Question 5

Not yet answered

Points out of 1

A sequence of numbers starts with 1, 2, and 3. The fourth number of the sequence is the sum of the previous three numbers in the sequence: $1 + 2 + 3 = 6$. In the same way, every number after the fourth is the sum of the previous three numbers. What is the eighth number in the sequence?

(A) 11 **(B)** 20 **(C)** 37 **(D)** 68 **(E)** 99

Select one:

- A**
 B
 C
 D
 E

Question 6

Not yet answered

Points out of 1

Steve's empty swimming pool will hold 24,000 gallons of water when full. It will be filled by 4 hoses, each of which supplies 2.5 gallons of water per minute. How many hours will it take to fill Steve's pool?

(A) 40 (B) 42 (C) 44 (D) 46 (E) 48

Select one:

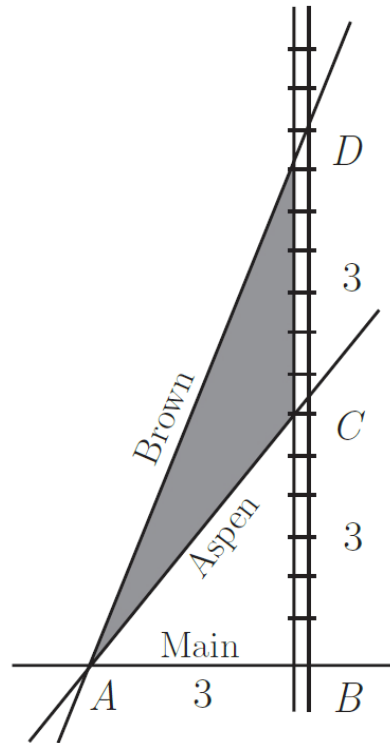
- A
- B
- C
- D
- E

Question 7

Not yet answered

Points out of 1

The triangular plot of ACD lies between Aspen Road, Brown Road and a railroad. Main Street runs east and west, and the railroad runs north and south. The numbers in the diagram indicate distances in miles. The width of the railroad track can be ignored.



How many square miles are in the plot of land ACD?

- (A) 2 (B) 3 (C) 4.5 (D) 6 (E) 9

Select one:

- A
- B
- C
- D
- E

Question 8

Not yet answered

Points out of 1

The length of a rectangle is increased by 10% percent and the width is decreased by 10% percent. What percent of the old area is the new area?

- (A) 90 (B) 99 (C) 100 (D) 101 (E) 110

Select one:

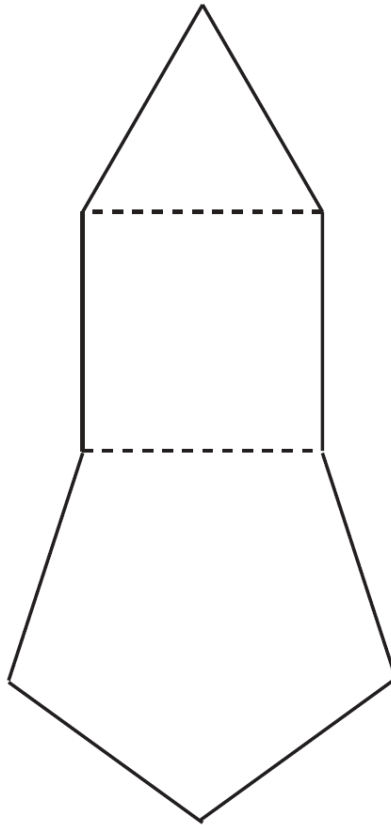
- A
- B
- C
- D
- E

Question 9

Not yet answered

Points out of 1

Construct a square on one side of an equilateral triangle. One on non-adjacent side of the square, construct a regular pentagon, as shown. One a non-adjacent side of the pentagon, construct a hexagon. Continue to construct regular polygons in the same way, until you construct an octagon.



How many sides does the resulting polygon have?

- (A) 21 (B) 23 (C) 25 (D) 27 (E) 29

Select one:

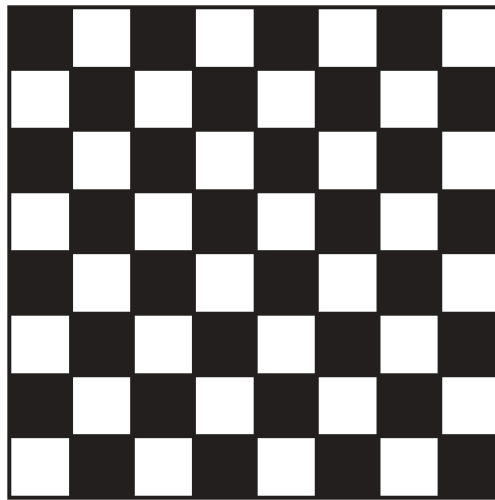
- A
 B
 C
 D
 E

Question 10

Not yet answered

Points out of 1

On a checkerboard composed of 64 unit squares, what is the probability that a randomly chosen unit square does **not** touch the outer edge of the board?



- (A) $\frac{1}{16}$ (B) $\frac{7}{16}$ (C) $\frac{1}{2}$ (D) $\frac{9}{16}$ (E) $\frac{49}{64}$

Select one:

- A
 B
 C
 D
 E

Question 11

Not yet answered

Points out of 1

The Amaco Middle School bookstore sells pencils costing a whole number of cents. Some seventh graders each bought a pencil, paying a total of 1.43 dollars. Some of the 30 sixth graders each bought a pencil, and they paid a total of 1.95 dollars. How many more sixth graders than seventh graders bought a pencil?

- (A) 1 (B) 2 (C) 3 (D) 4 (E) 5

Select one:

- A
 B
 C
 D
 E

Question 12

Not yet answered

Points out of 1

The two spinners shown are spun once and each lands on one of the numbered sectors.



What is the probability that the sum of the numbers in the two sectors is prime?

- (A) $\frac{1}{2}$ (B) $\frac{2}{3}$ (C) $\frac{3}{4}$ (D) $\frac{7}{9}$ (E) $\frac{5}{6}$

Select one:

- A
 B
 C
 D
 E

Question 13

Not yet answered

Points out of 1

A three-digit integer contains one of each of the digits 1, 3, and 5. What is the probability that the integer is divisible by 5?

- (A) $\frac{1}{6}$ (B) $\frac{1}{3}$ (C) $\frac{1}{2}$ (D) $\frac{2}{3}$ (E) $\frac{5}{6}$

Select one:

- A
 B
 C
 D
 E

Question 14

Not yet answered

Points out of 1

Austin and Temple are 50 miles apart along Interstate 35. Bonnie drove from Austin to her daughter's house in Temple, averaging 60 miles per hour. Leaving the car with her daughter, Bonnie rode a bus back to Austin along the same route and averaged 40 miles per hour on the return trip. What was the average speed for the round trip, in miles per hour?

- (A) 46 (B) 48 (C) 50 (D) 52 (E) 54

Select one:

- A
 B
 C
 D
 E

Question 15

Not yet answered

Points out of 1

A recipe that makes 5 servings of hot chocolate requires 2 squares of chocolate, $\frac{1}{4}$ cup sugar, 1 cup water and 4 cups milk. Jordan has 5 squares of chocolate, 2 cups of sugar, lots of water and 7 cups of milk. If she maintains the same ratio of ingredients, what is the greatest number of servings of hot chocolate she can make?

- (A) $5\frac{1}{8}$ (B) $6\frac{1}{4}$ (C) $7\frac{1}{2}$ (D) $8\frac{3}{4}$ (E) $9\frac{7}{8}$

Select one:

- A
 B
 C
 D
 E

Question 16

Not yet answered

Points out of 1

How many 3-digit positive integers have digits whose product equals 24?

- (A) 12 (B) 15 (C) 18 (D) 21 (E) 24

Select one:

- A
 B
 C
 D
 E

Question 17

Not yet answered

Points out of 1

The positive integers x and y are the two smallest positive integers for which the product of 360 and x is a square and the product of 360 and y is a cube. What is the sum of x and y ?

(A) 80 (B) 85 (C) 115 (D) 165 (E) 610

Select one:

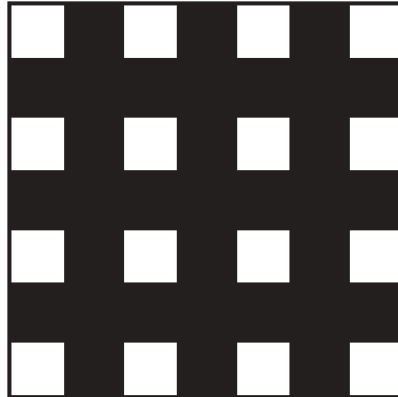
- A
- B
- C
- D
- E

Question 18

Not yet answered

Points out of 1

The diagram represents a 7-foot-by-7-foot floor that is tiled with 1-square-foot black tiles and white tiles. Notice that the corners have white tiles.



If a 15-foot-by-15-foot floor is to be tiled in the same manner, how many white tiles will be needed?

(A) 49 (B) 57 (C) 64 (D) 96 (E) 126

Select one:

- A
- B
- C
- D
- E

Question 19

Not yet answered

Points out of 1

Two angles of an isosceles triangle measure 70° and x° . What is the sum of the three possible values of x ?

- (A) 95 (B) 125 (C) 140 (D) 165 (E) 180

Select one:

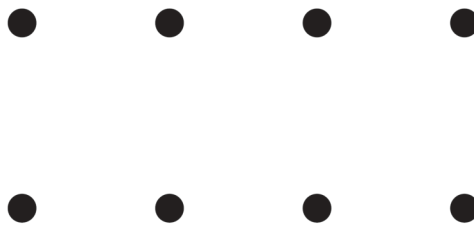
- A
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 E

Question 20

Not yet answered

Points out of 1

How many non-congruent triangles have vertices at three of the eight points in the array shown below?



- (A) 5 (B) 6 (C) 7 (D) 8 (E) 9

Select one:

- A
 B
 C
 D
 E

Question 21

Not yet answered

Points out of 1

Andy and Bethany have a rectangular array of numbers greater than zero with 40 rows and 75 columns. Andy adds the numbers in each row. The average of his 40 sums is A . Bethany adds the numbers in each column. The average of her 75 sums is B . Using only the answer choices given, What is the value of $\frac{A}{B}$?

- (A) $\frac{64}{225}$ (B) $\frac{8}{15}$ (C) 1 (D) $\frac{15}{8}$ (E) $\frac{225}{64}$

Select one:

- A
 B
 C
 D
 E

Question 22

Not yet answered

Points out of 1

How many whole numbers between 1 and 1000 do **not** contain the digit 1?

- (A) 512 (B) 648 (C) 720 (D) 728 (E) 800

Select one:

- A
 B
 C
 D
 E

Question 23

Not yet answered

Points out of 1

On the last day of school, Mrs. Wonderful gave jelly beans to her class. She gave each boy as many jelly beans as there were boys in the class. She gave each girl as many jelly beans as there were girls in the class. She brought 400 jelly beans, and when she finished, she had six jelly beans left. There were two more boys than girls in her class. How many students were in her class?

- (A) 26 (B) 28 (C) 30 (D) 32 (E) 34

Select one:

- A
 B
 C
 D
 E

Question 24

Not yet answered

Points out of 1

The letters A , B , C and D represent digits. If

$$\begin{array}{r} A \ B \\ + \ C \ A \\ \hline D \ A \end{array} \text{ and } \begin{array}{r} A \ B \\ - \ C \ A \\ \hline A \end{array},$$

what digit does D represent?

- (A) 5 (B) 6 (C) 7 (D) 8 (E) 9

Select one:

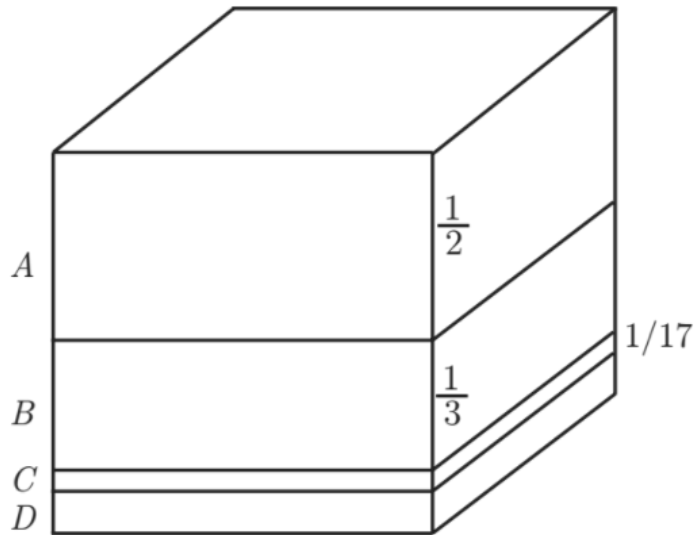
- A
- B
- C
- D
- E

Question 25

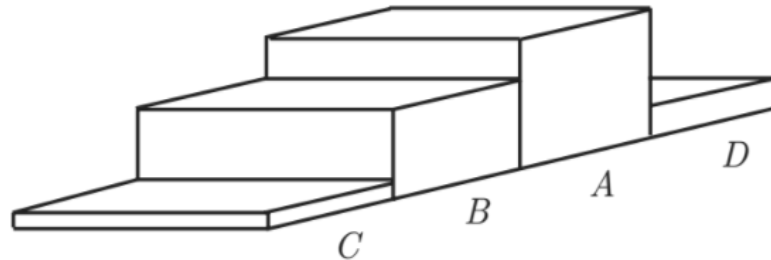
Not yet answered

Points out of 1

A one-cubic-foot cube is cut into four pieces by three cuts parallel to the top face of the cube. The first cut is $\frac{1}{2}$ foot from the top face. The second cut is $\frac{1}{3}$ foot below the first cut, and the third cut is $\frac{1}{17}$ foot below the second cut. From the top to the bottom the pieces are labeled A, B, C, and D.



The pieces are then glued together end to end as shown in the second diagram.



What is the total surface area of this solid in square feet?

- (A) 6 (B) 7 (C) $\frac{419}{51}$ (D) $\frac{158}{17}$ (E) 11

Select one:

- A
- B
- C
- D
- E