2003 AMC 8

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Question 1

Not yet answered

Points out of 1

Jamie counted the number of edges of a cube, Jimmy counted the numbers of corners, and Judy counted the number of faces. They then added the three numbers. What was the resulting sum?

$(\mathrm{A})\ 12 \qquad (\mathrm{B})\ 16 \qquad (\mathrm{C})\ 20 \qquad (\mathrm{D})\ 22 \qquad (\mathrm{E})\ 26$

Select one:

- **A**
- **B**
- **C**
- **D**
- **E**

Question 2

Not yet answered

Points out of 1

Which of the following numbers has the smallest prime factor?

$(\mathrm{A})\ 55 \qquad (\mathrm{B})\ 57 \qquad (\mathrm{C})\ 58 \qquad (\mathrm{D})\ 59 \qquad (\mathrm{E})\ 61$

Select one:

- **A**
- **B**
- **C**
- **D**
- **E**

Question 3

Not yet answered

Points out of 1

A burger at Ricky C's weighs 120 grams, of which 30 grams are filler. What percent of the burger is not filler?

$(\mathrm{A})\ 60\% \qquad (\mathrm{B})\ 65\% \qquad (\mathrm{C})\ 70\% \qquad (\mathrm{D})\ 75\% \qquad (\mathrm{E})\ 90\%$

Select one:

- **A**
- **B**
- **C**
- **D**
- **E**

Question 4

Not yet answered

Points out of 1

A group of children riding on bicycles and tricycles rode past Billy Bob's house. Billy Bob counted 7 children and 19 wheels. How many tricycles were there?

$(\mathrm{A})\ 2 \qquad (\mathrm{B})\ 4 \qquad (\mathrm{C})\ 5 \qquad (\mathrm{D})\ 6 \qquad (\mathrm{E})\ 7$

Select one:

- **A**
- **B**
- **C**
- **D**
- **E**

Question 5

Not yet answered

Points out of 1

If 20% of a number is 12, what is 30% of the same number?

$\mathbf{(A)}\ 15 \qquad \mathbf{(B)}\ 18 \qquad \mathbf{(C)}\ 20 \qquad \mathbf{(D)}\ 24 \qquad \mathbf{(E)}\ 30$

Select one:

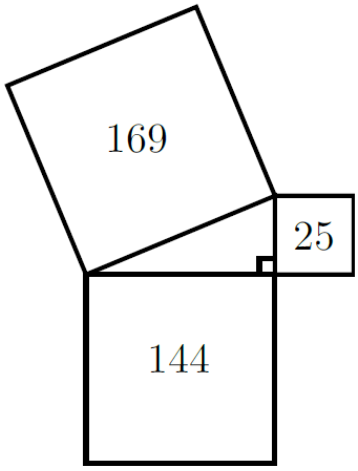
- **A**
- **B**
- **C**
- **D**
- **E**

Question 6

Not yet answered

Points out of 1

Given the areas of the three squares in the figure, what is the area of the interior triangle?



(A) 13 (B) 30 (C) 60 (D) 300 (E) 1800

Select one:

- A
- B
- C
- D
- E

Question 7

Not yet answered

Points out of 1

Blake and Jenny each took four 100-point tests. Blake averaged 78 on the four tests. Jenny scored 10 points higher than Blake on the first test, 10 points lower than him on the second test, and 20 points higher on both the third and fourth tests. What is the difference between Jenny's average and Blake's average on these four tests?

(A) 10 (B) 15 (C) 20 (D) 25 (E) 40

Select one:

- A
- B
- C
- D
- E

Question 8

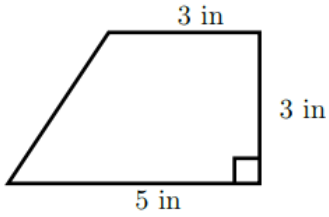
Not yet answered

Points out of 1

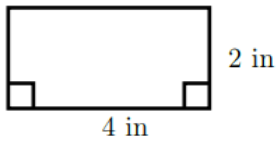
Bake Sale

Four friends, Art, Roger, Paul and Trisha, bake cookies, and all cookies have the same thickness. The shapes of the cookies differ, as shown.

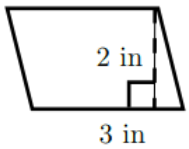
- Art's cookies are trapezoids:



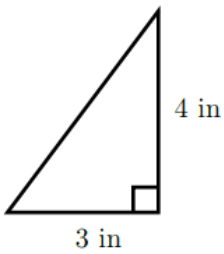
- Roger's cookies are rectangles:



- Paul's cookies are parallelograms:



- Trisha's cookies are triangles:



Each friend uses the same amount of dough, and Art makes exactly 12 cookies.

Who gets the fewest cookies from one batch of cookie dough?

(A) Art **(B)** Roger **(C)** Paul **(D)** Trisha **(E)** There is a tie for fewest.

Select one:

- **A**
- **B**
- **C**
- **D**
- **E**

Question 9

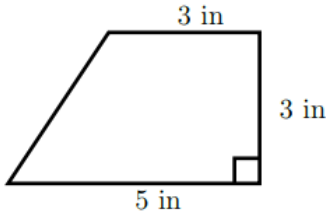
Not yet answered

Points out of 1

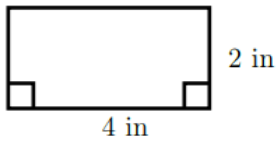
Bake Sale

Four friends, Art, Roger, Paul and Trisha, bake cookies, and all cookies have the same thickness. The shapes of the cookies differ, as shown.

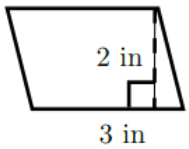
- Art's cookies are trapezoids:



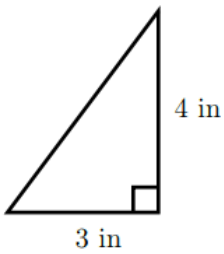
- Roger's cookies are rectangles:



- Paul's cookies are parallelograms:



- Trisha's cookies are triangles:



Each friend uses the same amount of dough, and Art makes exactly 12 cookies.

Art's cookies sell for 60 cents each. To earn the same amount from a single batch, how much should one of Roger's cookies cost in cents?

$\textbf{(A)}\ 18 \qquad \textbf{(B)}\ 25 \qquad \textbf{(C)}\ 40 \qquad \textbf{(D)}\ 75 \qquad \textbf{(E)}\ 90$

Select one:

- **A**
- **B**
- **C**
- **D**
- **E**

Question 10

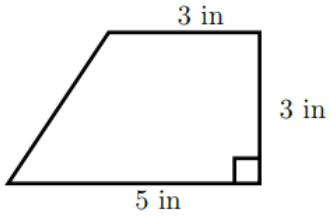
Not yet answered

Points out of 1

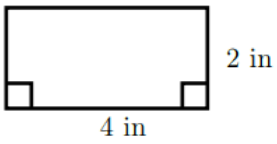
Bake Sale

Four friends, Art, Roger, Paul and Trisha, bake cookies, and all cookies have the same thickness. The shapes of the cookies differ, as shown.

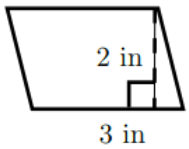
- Art's cookies are trapezoids:



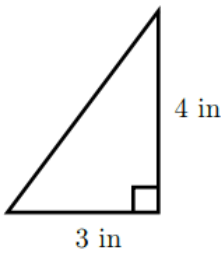
- Roger's cookies are rectangles:



- Paul's cookies are parallelograms:



- Trisha's cookies are triangles:



Each friend uses the same amount of dough, and Art makes exactly 12 cookies.

How many cookies will be in one batch of Trisha's cookies?

$\textbf{(A)}\ 10 \qquad \textbf{(B)}\ 12 \qquad \textbf{(C)}\ 16 \qquad \textbf{(D)}\ 18 \qquad \textbf{(E)}\ 24$

Select one:

- A
- B
- C
- D
- E

Question 11

Not yet answered

Points out of 1

Business is a little slow at Lou's Fine Shoes, so Lou decides to have a sale. On Friday, Lou increases all of Thursday's prices by 10 percent. Over the weekend, Lou advertises the sale: "Ten percent off the listed price. Sale starts Monday." How much does a pair of shoes cost on Monday that cost 40 dollars on Thursday?

(A) 36 **(B)** 39.60 **(C)** 40 **(D)** 40.40 **(E)** 44

Select one:

- **A**
- **B**
- **C**
- **D**
- **E**

Question 12

Not yet answered

Points out of 1

When a fair six-sided dice is tossed on a table top, the bottom face cannot be seen. What is the probability that the product of the faces than can be seen is divisible by 6?

(A) $1/3$ **(B)** $1/2$ **(C)** $2/3$ **(D)** $5/6$ **(E)** 1

Select one:

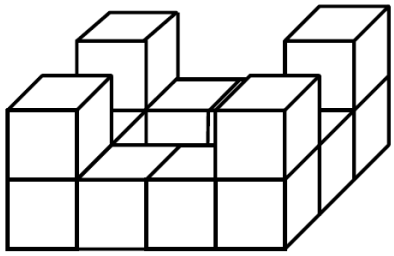
- **A**
- **B**
- **C**
- **D**
- **E**

Question 13

Not yet answered

Points out of 1

Fourteen white cubes are put together to form the figure on the right. The complete surface of the figure, including the bottom, is painted red. The figure is then separated into individual cubes.



How many of the individual cubes have exactly four red faces?

$\textbf{(A)}\ 4 \qquad \textbf{(B)}\ 6 \qquad \textbf{(C)}\ 8 \qquad \textbf{(D)}\ 10 \qquad \textbf{(E)}\ 12$

Select one:

- **A**
- **B**
- **C**
- **D**
- **E**

Question 14

Not yet answered

Points out of 1

In this addition problem, each letter stands for a different digit.

$$\begin{array}{cccc} & T & W & O \\ + & T & W & O \\ \hline F & O & U & R \end{array}$$

If $T = 7$ and the letter O represents an even number, what is the only possible value for W?

$\textbf{(A)}\ 0 \qquad \textbf{(B)}\ 1 \qquad \textbf{(C)}\ 2 \qquad \textbf{(D)}\ 3 \qquad \textbf{(E)}\ 4$

Select one:

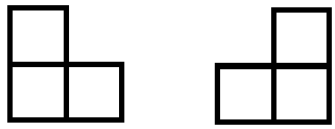
- **A**
- **B**
- **C**
- **D**
- **E**

Question 15

Not yet answered

Points out of 1

A figure is constructed from unit cubes. Each cube shares at least one face with another cube. What is the minimum number of cubes needed to build a figure with the front and side views shown?



FRONT SIDE

(A) 3 **(B)** 4 **(C)** 5 **(D)** 6 **(E)** 7

Select one:

- **A**
- **B**
- **C**
- **D**
- **E**

Question 16

Not yet answered

Points out of 1

Ali, Bonnie, Carlo, and Dianna are going to drive together to a nearby theme park. The car they are using has 4 seats: 1 Driver seat, 1 front passenger seat, and 2 back passenger seat. Bonnie and Carlo are the only ones who know how to drive the car. How many possible seating arrangements are there?

(A) 2 **(B)** 4 **(C)** 6 **(D)** 12 **(E)** 24

Select one:

- **A**
- **B**
- **C**
- **D**
- **E**

Question 17

Not yet answered

Points out of 1

The six children listed below are from two families of three siblings each. Each child has blue or brown eyes and black or blond hair. Children from the same family have at least one of these characteristics in common. Which two children are Jim's siblings?

Child	Eye Color	Hair Color
Benjamin	Blue	Black
Jim	Brown	Blonde
Nadeen	Brown	Black
Austin	Blue	Blonde
Tevyn	Blue	Black
Sue	Blue	Blonde

(A) Nadeen and Austin **(B)** Benjamin and Sue **(C)** Benjamin and Austin
(D) Nadeen and Tevyn **(E)** Austin and Sue

Select one:

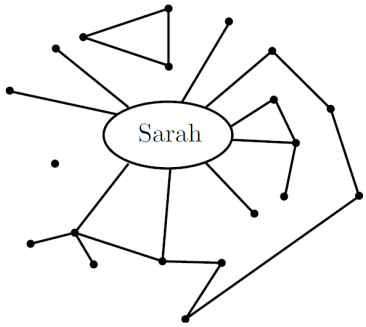
- **A**
- **B**
- **C**
- **D**
- **E**

Question 18

Not yet answered

Points out of 1

Each of the twenty dots on the graph below represents one of Sarah's classmates. Classmates who are friends are connected with a line segment. For her birthday party, Sarah is inviting only the following: all of her friends and all of those classmates who are friends with at least one of her friends.



How many classmates will not be invited to Sarah's party?

(A) 1 **(B)** 4 **(C)** 5 **(D)** 6 **(E)** 7

Select one:

- **A**
- **B**
- **C**
- **D**
- **E**

Question 19

Not yet answered

Points out of 1

How many integers between 1000 and 2000 have all three of the numbers 15, 20, and 25 as factors?

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

Select one:

- **A**
- **B**
- **C**
- **D**
- **E**

Question 20

Not yet answered

Points out of 1

What is the measure of the acute angle formed by the hands of the clock at 4:20 PM?

(A) 0 **(B)** 5 **(C)** 8 **(D)** 10 **(E)** 12

Select one:

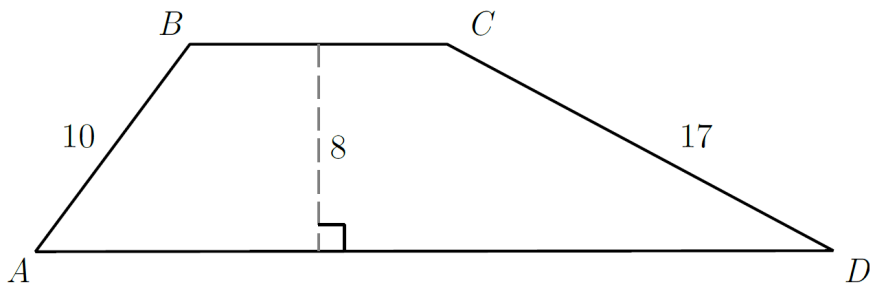
- **A**
- **B**
- **C**
- **D**
- **E**

Question 21

Not yet answered

Points out of 1

The area of trapezoid $ABCD$ is $164\ \text{cm}^2$. The altitude is 8 cm, AB is 10 cm, and CD is 17 cm.



What is BC, in centimeters?

(A) 9 **(B)** 10 **(C)** 12 **(D)** 15 **(E)** 20

Select one:

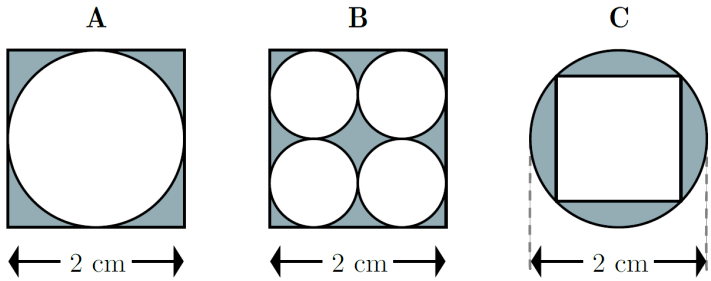
- **A**
- **B**
- **C**
- **D**
- **E**

Question 22

Not yet answered

Points out of 1

The following figures are composed of squares and circles. Which figure has a shaded region with largest area?



(A) A only **(B)** B only **(C)** C only **(D)** both A and B **(E)** all are equal

Select one:

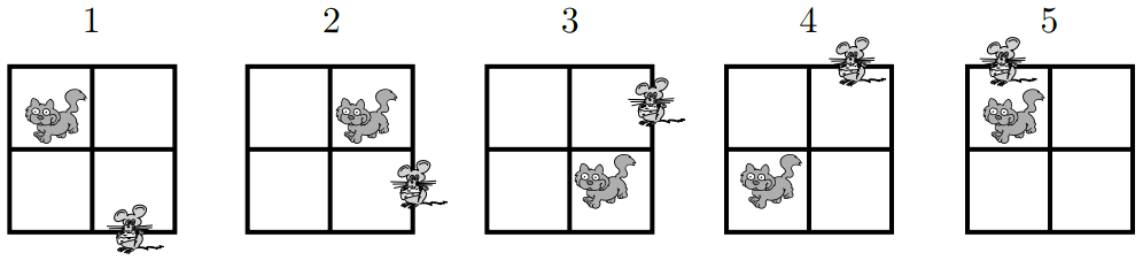
- **A**
- **B**
- **C**
- **D**
- **E**

Question 23

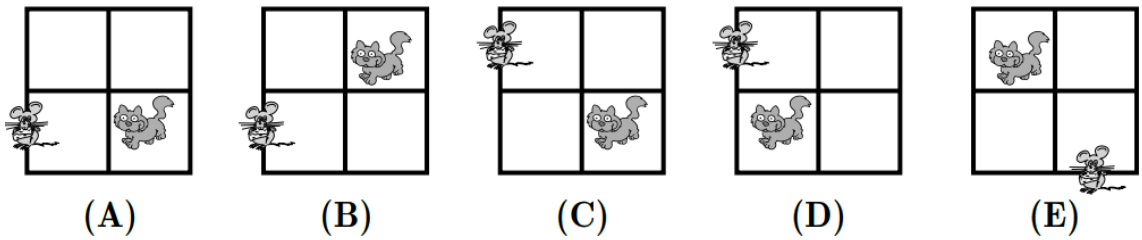
Not yet answered

Points out of 1

In the pattern below, the cat (denoted as a cat in the figures below) moves clockwise through the four squares, and the mouse (denoted as a mouse in the figures below) moves counterclockwise through the eight exterior segments of the four squares.



If the pattern is continued, where would the cat and mouse be after the 247th move?



Select one:

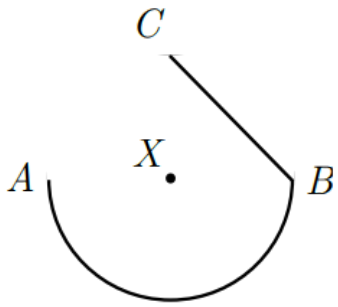
- **A**
- **B**
- **C**
- **D**
- **E**

Question 24

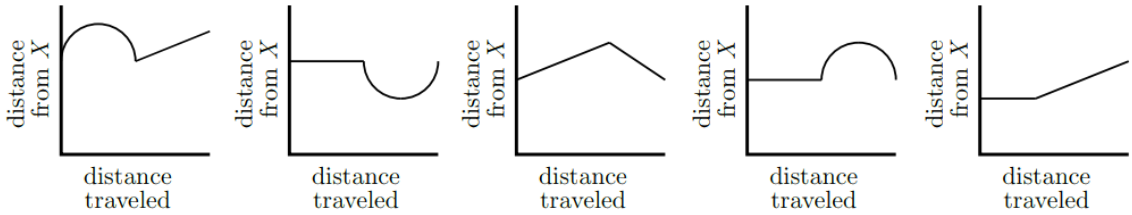
Not yet answered

Points out of 1

A ship travels from point A to point B along a semicircular path, centered at Island X. Then it travels along a straight path from B to C.



Which of these graphs best shows the ship's distance from Island X as it moves along its course?



Select one:

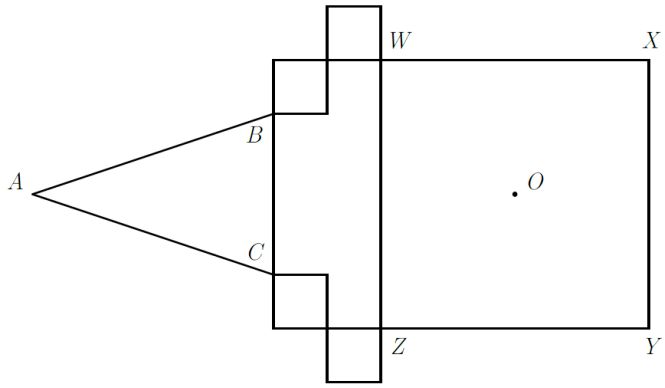
- **A**
- **B**
- **C**
- **D**
- **E**

Question 25

Not yet answered

Points out of 1

In the figure, the area of square $WXYZ$ is $25\ \text{cm}^2$. The four smaller squares have sides 1 cm long, either parallel to or coinciding with the sides of the large square. In $\triangle ABC$, $AB = AC$, and when $\triangle ABC$ is folded over side $\overline{BC}$, point A coincides with O, the center of square $WXYZ$.



What is the area of $\triangle ABC$, in square centimeters?

(A) $\frac{15}{4}$ **(B)** $\frac{21}{4}$ **(C)** $\frac{27}{4}$ **(D)** $\frac{21}{2}$ **(E)** $\frac{27}{2}$

Select one:

- **A**
- **B**
- **C**
- **D**
- **E**