

AMC 8 全真试题(一)

1. Connie multiplies a number by 2 and gets 60 as her answer. However, she should have divided the number by 2 to get the correct answer. What is the correct answer?

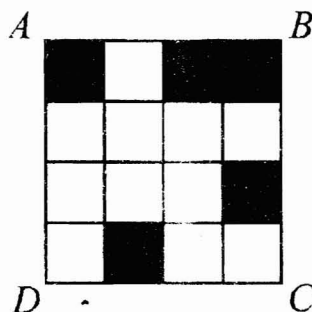
(A) 7.5 (B) 15 (C) 30 (D) 120 (E) 240

2. Karl bought five folders from Pay-A-Lot at a cost of \$2.50 each. Pay-A-Lot had a 20%-off sale the following day. How much could Karl have saved on the purchase by waiting a day?



(A) \$1.00 (B) \$2.00 (C) \$2.50 (D) \$2.75 (E) \$5.00

3. What is the minimum number of small squares that must be colored black so that a line of symmetry lies on the diagonal \overline{BD} of square $ABCD$?



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

4. A square and a triangle have equal perimeters. The lengths of the three sides of the triangle are 6.1 cm, 8.2 cm and 9.7 cm. What is the area of the square in square centimeters?

(A) 24 (B) 25 (C) 36 (D) 48 (E) 64

5. Soda is sold in packs of 6, 12 and 24 cans. What is the minimum number of packs needed to buy exactly 90 cans of soda?



(A) 4 (B) 5 (C) 6 (D) 8 (E) 15

6. Suppose d is a digit. For how many values of d is $2.00d5 > 2.005$?

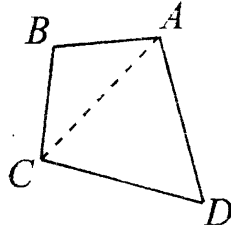
(A) 0 (B) 4 (C) 5 (D) 6 (E) 10

7. Bill walks $\frac{1}{2}$ mile south, then $\frac{3}{4}$ mile east, and finally $\frac{1}{2}$ mile south. How many miles is he, in a direct line, from his starting point?



(A) 1 (B) $1\frac{1}{4}$ (C) $1\frac{1}{2}$ (D) $1\frac{3}{4}$ (E) 2

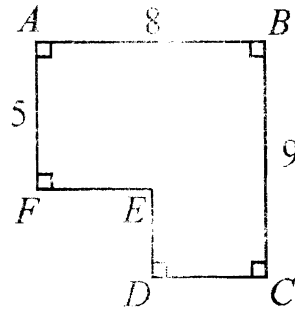
8. Suppose m and n are positive odd integers. Which of the following must also be an odd integer?
- (A) $m + 3n$ (B) $3m - n$ (C) $3m^2 + 3n^2$ (D) $(nm + 3)^2$ (E) $3mn$
9. In quadrilateral $ABCD$, sides \overline{AB} and \overline{BC} both have length 10, sides \overline{CD} and \overline{DA} both have length 17, and the measure of angle ADC is 60° . What is the length of diagonal \overline{AC} ?



- (A) 13.5 (B) 11 (C) 15.5 (D) 17 (E) 18.5
10. Joe had walked half way from home to school when he realized he was late. He ran the rest of the way to school. He ran 3 times as fast as he walked. Joe took 6 minutes to walk half way to school. How many minutes did it take Joe to get from home to school?
- (A) 7 (B) 7.3 (C) 7.7 (D) 8 (E) 8.3
11. The sales tax rate in Bergville is 6%. During a sale at the Bergville Coat Closet, the price of a coat is discounted 20% from its \$90.00 price. Two clerks, Jack and Jill, calculate the bill independently. Jack rings up \$90.00 and adds 6% sales tax, then subtracts 20% from this total. Jill rings up \$90.00, subtracts 20% of the price, then adds 6% of the discounted price for sales tax. What is Jack's total minus Jill's total?
- (A) $-\$1.06$ (B) $-\$0.53$ (C) $\$0$ (D) $\$0.53$ (E) $\$1.06$
12. Big Al, the ape, ate 100 bananas from May 1 through May 5. Each day he ate six more bananas than on the previous day. How many bananas did Big Al eat on May 5?



13. The area of polygon $ABCDEF$ is 52 with $AB = 8$, $BC = 9$ and $FA = 5$. What is $DE + EF$?



- (A) 7 (B) 8 (C) 9 (D) 10 (E) 11

14. The Little Twelve Basketball Conference has two divisions, with six teams in each division. Each team plays each of the other teams in its own division twice and every team in the other division once. How many conference games are scheduled?

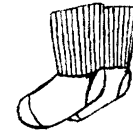


- (A) 80 (B) 96 (C) 100 (D) 108 (E) 192

15. How many different isosceles triangles have integer side lengths and perimeter 23?

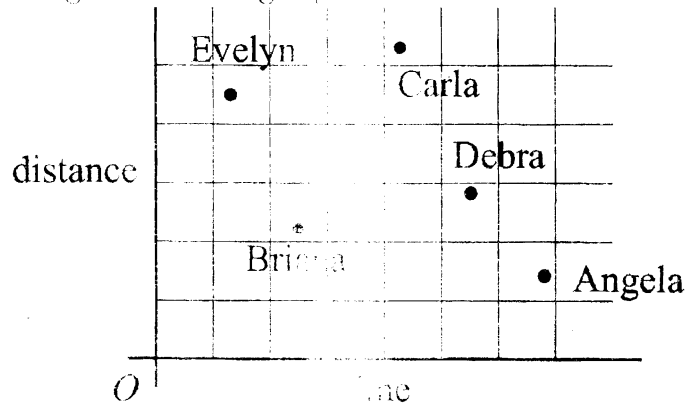
- (A) 2 (B) 4 (C) 6 (D) 9 (E) 11

16. A five-legged Martian has a drawer full of socks, each of which is red, white or blue, and there are at least five socks of each color. The Martian pulls out one sock at a time without looking. How many socks must the Martian remove from the drawer to be certain there will be 5 socks of the same color?



- (A) 6 (B) 9 (C) 12 (D) 13 (E) 15

17. The results of a cross-country team's training run are graphed below. Which student has the greatest average speed?

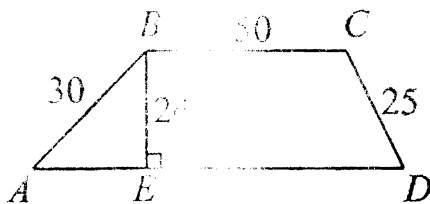


- (A) Angela (B) Briana (C) Carla (D) Debra (E) Evelyn

5-3

18. How many three-digit numbers are divisible by 13?
 (A) 7 (B) 67 (C) 69 (D) 76 (E) 77

19. What is the perimeter of trapezoid $ABCD$?



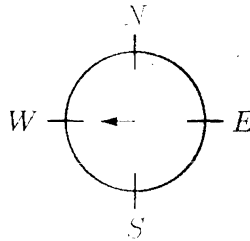
- (A) 180 (B) 188 (C) 196 (D) 200 (E) 204
20. Alice and Bob play a game involving a circle whose circumference is divided by 12 equally-spaced points. The points are numbered clockwise, from 1 to 12. Both start on point 12. Alice moves clockwise and Bob, counterclockwise. In a turn of the game, Alice moves 5 points clockwise and Bob moves 9 points counterclockwise. The game ends when they stop on the same point. How many turns will this take?
- (A) 6 (B) 8 (C) 12 (D) 14 (E) 24
21. How many distinct triangles can be drawn using three of the dots below as vertices?



- (A) 9 (B) 12 (C) 18 (D) 20 (E) 24
22. A company sells detergent in three different sized boxes: small (S), medium (M) and large (L). The medium size costs 50% more than the small size and contains 20% less detergent than the large size. The large size contains twice as much detergent as the small size and costs 30% more than the medium size. Rank the three sizes from best to worst buy.
- (A) SML (B) LMS (C) MSL (D) LSM (E) MLS

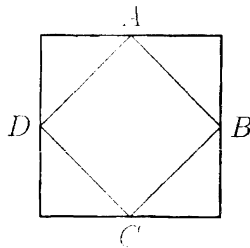
AMC8 全真试题(三)

- 1 Mindy made three purchases for \$1.98, \$5.04 and \$9.89. What was her total, to the nearest dollar?
 (A) \$10 (B) \$15 (C) \$16 (D) \$17 (E) \$18
- 2 On the AMC 8 contest Billy answers 13 questions correctly, answers 7 questions incorrectly and doesn't answer the last 5. What is his score?
 (A) 1 (B) 6 (C) 13 (D) 19 (E) 26
- 3 Elisa swims laps in the pool. When she first started, she completed 10 laps in 25 minutes. Now she can finish 12 laps in 24 minutes. By how many minutes has she improved her lap time?
 (A) $\frac{1}{2}$ (B) $\frac{3}{4}$ (C) 1 (D) 2 (E) 3
- 4 Initially, a spinner points west. Chenille moves it clockwise $2\frac{1}{4}$ revolutions and then counter-clockwise $3\frac{3}{4}$ revolutions. In what direction does the spinner point after the two moves?



- (A) north (B) east (C) south (D) west (E) northwest

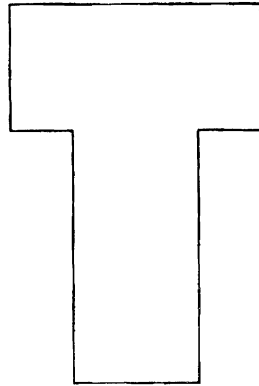
- 5 Points A, B, C and D are midpoints of the sides of the larger square. If the larger square has area 60, what is the area of the smaller square?



- (A) 15 (B) 20 (C) 24 (D) 30 (E) 40

6-1

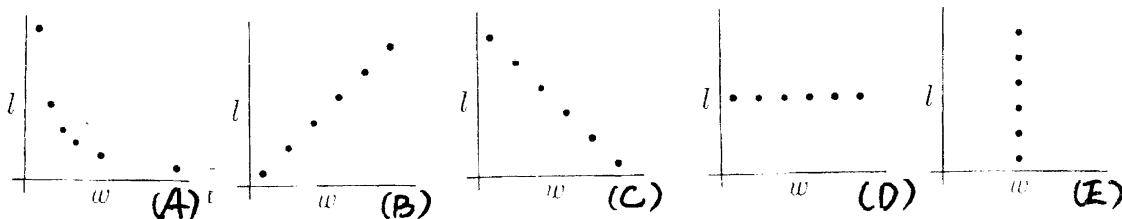
- 6] The letter T is formed by placing two 2×4 inch rectangles next to each other, as shown. What is the perimeter of the T, in inches?



- (A) 12 (B) 16 (C) 20 (D) 22 (E) 24
- 7] Circle X has a radius of π . Circle Y has a circumference of 8π . Circle Z has an area of 9π . List the circles in order from smallest to largest radius.
- (A) X, Y, Z (B) Z, X, Y (C) Y, X, Z (D) Z, Y, X (E) X, Z, Y
- 8] The table shows some of the results of a survey by radiostation KAMC. What percentage of the males surveyed listen to the station?

	Listen	Don't Listen	Total
Males	?	26	?
Females	58	?	96
Total	136	64	200

- (A) 39 (B) 48 (C) 52 (D) 55 (E) 75
- 9] What is the product of $\frac{3}{2} \times \frac{4}{3} \times \frac{5}{4} \times \cdots \times \frac{2006}{2005}$?
- (A) 1 (B) 1002 (C) 1003 (D) 2005 (E) 2006
- 10] Jorge's teacher asks him to plot all the ordered pairs (w, l) of positive integers for which w is the width and l is the length of a rectangle with area 12. What should his graph look like?



- 11 How many two-digit numbers have digits whose sum is a perfect square?
(A) 13 (B) 16 (C) 17 (D) 18 (E) 19
- 12 Antonette gets 70% on a 10-problem test, 80% on a 20-problem test and 90% on a 30-problem test. If the three tests are combined into one 60-problem test, which percent is closest to her overall score?
(A) 40 (B) 77 (C) 80 (D) 83 (E) 87
- 13 Cassie leaves Escanaba at 8:30 AM heading for Marquette on her bike. She bikes at a uniform rate of 12 miles per hour. Brian leaves Marquette at 9:00 AM heading for Escanaba on his bike. He bikes at a uniform rate of 16 miles per hour. They both bike on the same 62-mile route between Escanaba and Marquette. At what time in the morning do they meet?
(A) 10 : 00 (B) 10 : 15 (C) 10 : 30 (D) 11 : 00 (E) 11 : 30
- 14 Problems 14, 15 and 16 involve Mrs. Reed's English assignment.
A Novel Assignment
The students in Mrs. Reed's English class are reading the same 760-page novel. Three friends, Alice, Bob and Chandra, are in the class. Alice reads a page in 20 seconds, Bob reads a page in 45 seconds and Chandra reads a page in 30 seconds.
If Bob and Chandra both read the whole book, Bob will spend how many more seconds reading than Chandra?
(A) 7,600 (B) 11,400 (C) 12,500 (D) 15,200 (E) 22,800
- 15 Problems 14, 15 and 16 involve Mrs. Reed's English assignment.
A Novel Assignment
The students in Mrs. Reed's English class are reading the same 760-page novel. Three friends, Alice, Bob and Chandra, are in the class. Alice reads a page in 20 seconds, Bob reads a page in 45 seconds and Chandra reads a page in 30 seconds.

Chandra and Bob, who each have a copy of the book, decide that they can save time by "team reading" the novel. In this scheme, Chandra will read from page 1 to a certain page and Bob will read from the next page through page 760, finishing the book. When they are through they will tell each other about the part they read. What is the last page that Chandra should read so that she and Bob spend the same amount of time reading the novel?
(A) 425 (B) 444 (C) 456 (D) 484 (E) 506

- 16 Problems 14, 15 and 16 involve Mrs. Reed's English assignment.

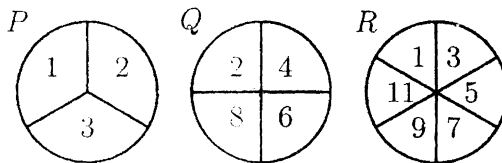
A Novel Assignment

The students in Mrs. Reed's English class are reading the same 760-page novel. Three friends Alice, Bob and Chandra, are in the class. Alice reads a page in 20 seconds, Bob reads a page in 45 seconds and Chandra reads a page in 30 seconds.

Before Chandra and Bob start reading, Alice says she would like to team read with them. They divide the book into three sections so that each reads for the same length of time, how many seconds will each have to read?

- (A) 6400 (B) 6600 (C) 6800 (D) 7000 (E) 7200

- 17 Jeff rotates spinners P , Q and R and adds the resulting numbers. What is the probability that his sum is an odd number?

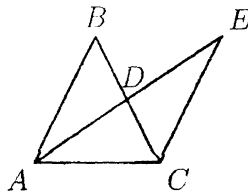


- (A) $\frac{1}{4}$ (B) $\frac{1}{3}$ (C) $\frac{1}{2}$ (D) $\frac{2}{3}$ (E) $\frac{3}{4}$

- 18 A cube with 3-inch edges is made using 27 cubes with 1-inch edges. Nineteen of the small cubes are white and eight are black. If the eight black cubes are placed at the corners of the larger cube, what fraction of the surface area of the larger cube is white?

- (A) $\frac{1}{9}$ (B) $\frac{1}{4}$ (C) $\frac{4}{9}$ (D) $\frac{5}{9}$ (E) $\frac{19}{27}$

- 19 Triangle ABC is an isosceles triangle with $\overline{AB} = \overline{BC}$. Point D is the midpoint of both \overline{AC} and \overline{BE} , and \overline{CE} is 11 units long. Triangle ABD is congruent to triangle ECD . What is the length of \overline{BD} ?



- (A) 4 (B) 4.5 (C) 5 (D) 5.5 (E) 6

6-4

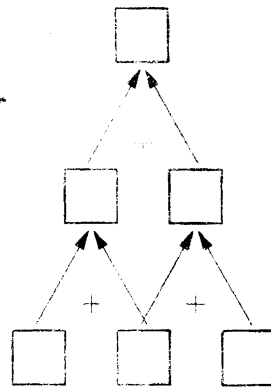
20] A singles tournament had six players. Each player played every other player only once, with no ties. If Helen won 4 games, Ines won 3 games, Janet won 2 games, Kendra won 2 games and Lara won 2 games, how many games did Monica win?

- (A) 0 (B) 1 (C) 2 (D) 3 (E) 4

21] An aquarium has a rectangular base that measures 100 cm by 40 cm and has a height of 50 cm. The aquarium is filled with water to a depth of 37 cm. A rock with volume 1000cm^3 is then placed in the aquarium and completely submerged. By how many centimeters does the water level rise?

- (A) 0.25 (B) 0.5 (C) 1 (D) 1.25 (E) 2.5

22] Three different one-digit positive integers are placed in the bottom row of cells. Numbers in adjacent cells are added and the sum is placed in the cell above them. In the second row, continue the same process to obtain a number in the top cell. What is the difference between the largest and smallest numbers possible in the top cell?



- (A) 16 (B) 24 (C) 25 (D) 26 (E) 35

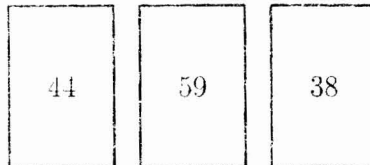
6 - 5

- 23 A box contains gold coins. If the coins are equally divided among six people, four coins are left over. If the coins are equally divided among five people, three coins are left over. If the box holds the smallest number of coins that meets these two conditions, how many coins are left when equally divided among seven people?
- (A) 0 (B) 1 (C) 2 (D) 3 (E) 5

- 24 In the multiplication problem below, A , B , C and D are different digits. What is $A + B$?

$$\begin{array}{r} A \ B \ A \\ \times \quad C \ D \\ \hline C \ D \ C \ D \end{array}$$

- (A) 1 (B) 2 (C) 3 (D) 4 (E) 9
- 25 Barry wrote 6 different numbers, one on each side of 3 cards, and laid the cards on a table, as shown. The sums of the two numbers on each of the three cards are equal. The three numbers on the hidden sides are prime numbers. What is the average of the hidden prime numbers?



- (A) 13 (B) 14 (C) 15 (D) 16 (E) 17

6-6