

1

Which number represents ten thousand?

- (A) 10 (B) 10 000 000 (C) 10 000 (D) 100 (E) 1 000

A	B	B	D	C	A	D	E	E	C
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2

A number line has 40 consecutive integers marked on it. If the smallest of these integers is -11, what is the largest?

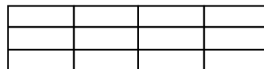
- (A) 29 (B) 30 (C) 28 (D) 51 (E) 50

A	C	B	D	C	E	D	B	E	A
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3

In the given diagram, all 12 of the small rectangles are the same size. Your task is to completely shade some of the rectangles until $\frac{2}{3}$ of $\frac{3}{4}$ of the diagram is shaded. The number of rectangles you need to shade is

- (A) 9 (B) 3 (C) 4
(D) 6 (E) 8



A	A	B	C	C	E	D	B	E	D
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4

Five students named Fred, Gail, Henry, Iggy, and Joan are seated around a circular table in that order. To decide who goes first in a game, they play "countdown". Henry starts by saying '34', with Iggy saying '33'. If they continue to count down in their circular order, who will eventually say '1'?

- (A) Fred (B) Gail (C) Henry (D) Iggy (E) Joan

A	C	B	B	C	D	D	E	E	A
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5

A palindrome is a positive integer whose digits are the same when read forwards or backwards. For example, 2002 is a palindrome. What is the smallest number which can be added to 2002 to produce a larger palindrome?

- (A) 11 (B) 110 (C) 108 (D) 18 (E) 1001

A	A	B	E	C	C	D	D	E	B
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6

The diagram shows a magic square in which the sums of the numbers in any row, column or diagonal are equal. What is the value of n ?

- (A) 3 (B) 6 (C) 7
(D) 10 (E) 11

8		
9		5
4	n	

A	C	B	B	C	D	D	E	E	A
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7

The letters of the word 'GAUSS' and the digits in the number '1998' are each cycled separately and then numbered as shown.

1. AUSSG 9981
2. USSGA 9819
3. SSGAU 8199
- etc.

If the pattern continues in this way, what number will appear in front of GAUSS 1998?

- (A) 4 (B) 5 (C) 9 (D) 16 (E) 20

A	A	B	C	C	D	D	B	E	E
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8

The product of three *different* positive integers is 72. What is the smallest possible sum of these integers?

- (A) 13 (B) 14 (C) 15 (D) 17 (E) 12

A	E	B	C	C	D	D	A	E	B
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9

The total area of a set of different squares, arranged from smallest to largest, is 35 km^2 . The smallest square has a side length of 500 m. The next larger square has a side length of 1000 m. In the same way, each successive square has its side length increased by 500 m. What is the total number of squares?

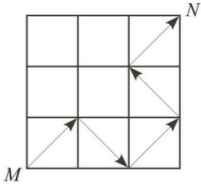
- (A) 5 (B) 6 (C) 7 (D) 8 (E) 9

A	D	B	E	C	A	D	B	E	C
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10

Kira can draw a connected path from M to N by drawing arrows along only the diagonals of the nine squares shown. One such possible path is shown. A path cannot pass through the interior of the same square twice. In total, how many different paths can she draw from M to N ?

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



A	D	B	E	C	C	D	B	E	A
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