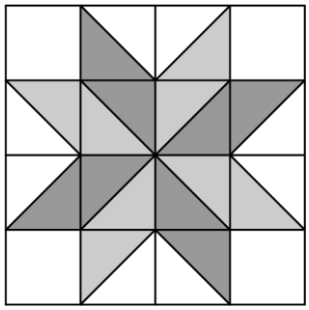
2025 MAA AMC 8

Problem 1

The eight-pointed star, shown in the figure below, is a popular quilting pattern. What percent of the entire 4×4 grid is covered by the star?

如下图所示的八角星是流行的拼布图案。问这颗星覆盖了整个 4×4 网格的百分之多少?



(A) 40 **(B)** 50 **(C)** 60 **(D)** 75 **(E)** 80

Problem 2

The table below shows the Ancient Egyptian hieroglyphs that were used to represent different numbers.

下表显示了用于表示不同数字的古埃及象形文字。

					
100,000	10,000	1,000	100	10	1

For example, the number 32 was represented by the hieroglyphs . What number is represented by the following combination of hieroglyphs?

例如，数字 32 用表示。问以下的象形文字组合表示的数是多少?



(A) 1,423 **(B)** 10,423 **(C)** 14,023 **(D)** 14,203 **(E)** 14,230

Problem 3

Buffalo Shuffle-o is a card game in which all the cards are distributed evenly among all players at the start of the game. When Annika and 3 of her friends play *Buffalo Shuffle-o*, each player is dealt 15 cards. Suppose 2 more friends join the next game. How many cards will be dealt to each player?

Buffalo Shuffle-o 是一种纸牌游戏，游戏开始时所有牌要平分给所有玩家。当 Annika 和她的 3 个朋友玩 *Buffalo Shuffle-o* 时，每位玩家分得 15 张牌。假设接下来又有 2 个朋友加入游戏，问每位玩家会分得多少张牌?

(A) 8 **(B)** 9 **(C)** 10 **(D)** 11 **(E)** 12

Problem 4

Lucius is counting backward by 7s. His first three numbers are 100, 93, and 86. What is his 10th number?

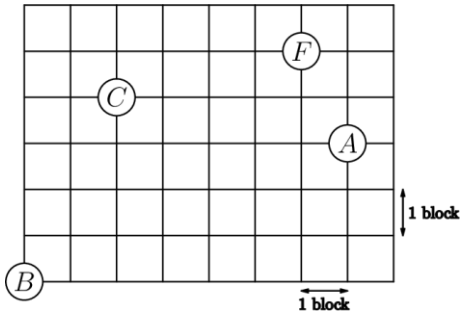
Lucius 按每次倒数 7 的方式数数。他的前三个数是 100、93 和 86。问他的第 10 个数是多少?

(A) 30 **(B)** 37 **(C)** 42 **(D)** 44 **(E)** 47

Problem 5

Betty drives a truck to deliver packages in a neighborhood whose street map is shown below. Betty starts at the factory (labled F) and drives to location A, then B, then C, before returning to F. What is the shortest distance, in blocks, she can drive to complete the route?

Betty 驾驶卡车在一个地图如下图所示的街区送货。Betty 从工厂（标记为 F）出发，依次前往位置 A，B，C，然后返回 F。问她完成这条路线的最短行驶距离是多少个街区?



(A) 20 **(B)** 22 **(C)** 24 **(D)** 26 **(E)** 28

Problem 6

Sekou writes the numbers 15,16,17,18,19. After he erases one of his numbers, the sum of the remaining four numbers is a multiple of 4. Which number did he erase?

Sekou 写下了数 15，16，17，18，19。在他擦掉其中一个数后，剩余四个数的和是 4 的倍数。问他擦掉了哪个数?

(A) 15 **(B)** 16 **(C)** 17 **(D)** 18 **(E)** 19

Problem 7

On the most recent exam on Prof. Xochi's class,

- 5 students earned a score of at least 95%
- 13 students earned a score of at least 90%
- 27 students earned a score of at least 85%
- 50 students earned a score of at least 80%

How many students earned a score of at least 80% and less than 90%?

在 Xochi 教授的班级的最近一次考试中：

5 名学生的成绩至少为 95%

13 名学生的成绩至少为 90%

27 名学生的成绩至少为 85%

50 名学生的成绩至少为 80%

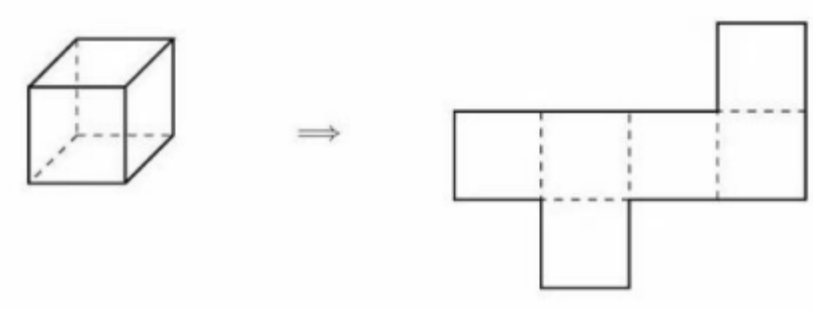
问有多少名学生的成绩在 80%及以上但低于 90%?

(A) 8 **(B)** 14 **(C)** 22 **(D)** 37 **(E)** 45

Problem 8

Isaiah cuts open a cardboard cube along some of its edges to form the flat shape shown on the right, which has an area of 18 square centimeters. What is the volume of the cube in cubic centimeters?

Isaiah 沿着一些边切开一个纸板立方体，将其展开成如右图所示的平面图形，该图形的面积为 18 平方厘米。问这个立方体的体积是多少立方厘米?

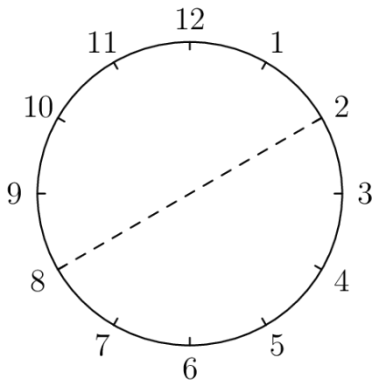


(A) $3\sqrt{3}$ **(B)** 6 **(C)** 9 **(D)** $6\sqrt{3}$ **(E)** $9\sqrt{3}$

Problem 9

Ningli looks at the 6 pairs of numbers directly across from each other on a clock. She takes the average of each pair of numbers. What is the average of the resulting 6 numbers?

Ningli 看着钟表上相对的 6 对数。她计算每对数的平均值。问这 6 个平均值的平均值是多少?

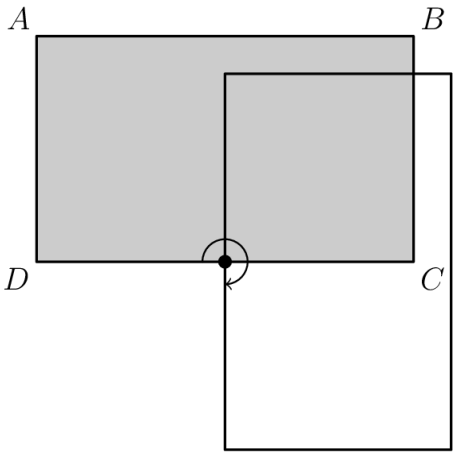


(A) 5 **(B)** 6.5 **(C)** 8 **(D)** 9.5 **(E)** 12

Problem 10

In the figure below, $ABCD$ is a rectangle with sides of length $AB = 5$ inches and $AD = 3$ inches. Rectangle $ABCD$ is rotated 90° clockwise around the midpoint of side DC to give a second rectangle. What is the total area, in square inches, covered by the two overlapping rectangles?

在下图中，ABCD 是一个矩形，其边长 AB 为 5 英寸，AD 为 3 英寸。矩形 ABCD 绕边 DC 的中点顺时针旋转 90°，生成了第二个矩形。问这两个矩形覆盖的总面积是多少平方英寸?

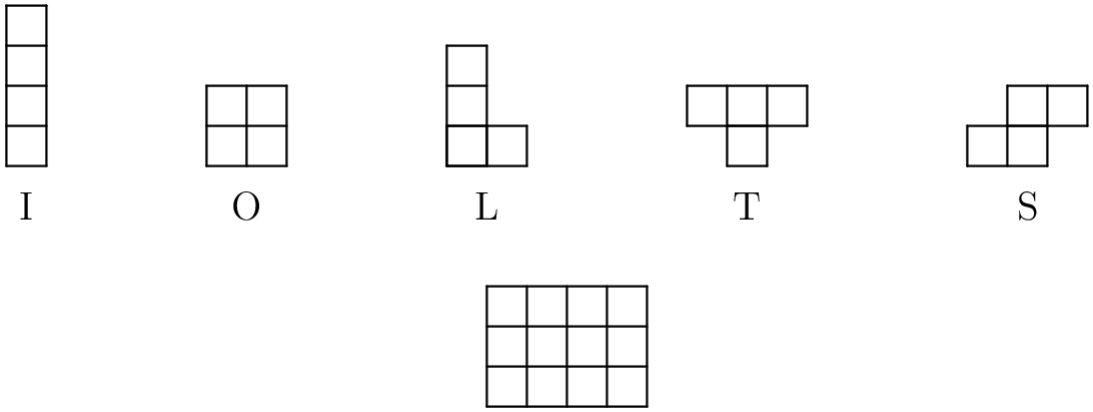


(A) 21 **(B)** 22.25 **(C)** 23 **(D)** 23.75 **(E)** 25

Problem 11

A tetromino consists of four squares connected along their edges. There are five possible tetromino shapes, I, O, L, T, and S, shown below, which can be rotated or flipped over.Three tetrominoes are used to completely cover a 3×4 rectangle. At least one of the tiles is an S tile. What are the other two tiles?

一个 tetromino 由四个沿边相连的正方形组成。如下图所示，可能的五种形状的 tetromino 为 I，O，L，T，S，它们可以旋转或翻转。可以用三个 tetromino 完全覆盖一个 3×4 的矩形，其中至少用了一个是 S。问其他两个形状是什么？

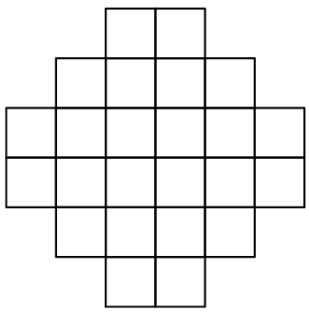


(A) A and L (B) I and T (C) L and L (D) L and S (E) O and T

Problem 12

The region shown below consists of 24 squares, each with side length 1 centimeter. What is the area, in square centimeters, of the largest circle that can fit inside the region, possibly touching the boundaries?

下图所示的区域由 24 个边长为 1 厘米的正方形组成。可以容纳在该区域内的最大圆的面积是多少平方厘米（圆可能接触到边界）？

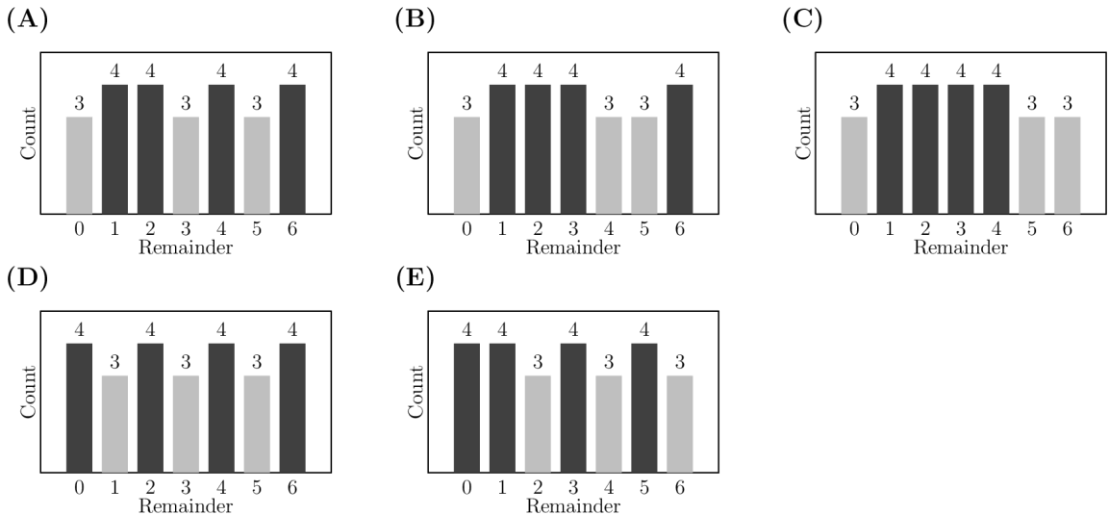


(A) 3π **(B)** 4π **(C)** 5π **(D)** 6π **(E)** 8π

Problem 13

Each of the even numbers 2，4，6，…，50 is divided by 7. The remainders are recorded. Which histogram displays the number of times each remainder occurs?

将偶数 2，4，6，．．．，50 分别除以 7，记录它们的余数。问以下哪个直方图显示了每个余数出现的次数?



Count：次数｜Remainder：余数

Problem 14

A number N is inserted into the list 2,6,7,7,28. The mean is now twice as great as the median. What is N?

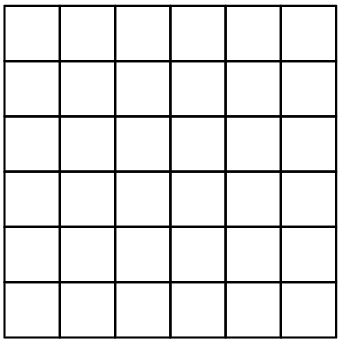
数 N 被加入到列表 2，6，7，7，28 中。此时列表的平均值变成了中位数的两倍。问 N 是多少?

(A) 7 **(B)** 14 **(C)** 20 **(D)** 28 **(E)** 34

Problem 15

Kei draws a 6-by-6 grid. He colors 13 of the unit squares silver and the remaining squares gold. Kei then folds the grid in half vertically, forming pairs of overlapping unit squares. Let m and M equal the least and greatest possible number of gold-on-gold pairs, respectively. What is the value of $m + M$?

Kei 画了一个 6×6 的方格表，他将其中的 13 个单元格涂成银色，其余单元格涂成金色。接着，Kei 将方格表沿垂直方向对折，形成重叠的单元格对。设 m 和 M 分别表示金色格-金色格的对数的最小和最大可能数目。问$m + M$的值是多少?



(A) 12 **(B)** 14 **(C)** 16 **(D)** 18 **(E)** 20

Problem 16

Five distinct integers from 1 to 10 are chosen, and five distinct integers from 11 to 20 are chosen. No two numbers differ by exactly 10. What is the sum of the ten chosen numbers?

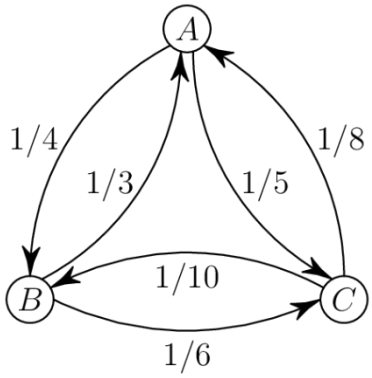
从 1 到 10 中选择 5 个互不相同的整数，从 11 到 20 中也选择 5 个互不相同的整数。 要求任意选出的两数之差都不等于 10。问选出的 10 个数的和是多少?

(A) 95 **(B)** 100 **(C)** 105 **(D)** 110 **(E)** 115

Problem 17

In the land of Markovia, there are three cities: A, B, and C. There are 100 people who live in A, 120 who live in B, and 160 who live in C. Everyone works in one of the three cities, and a person may work in the same city where they live. In the figure below, an arrow pointing from one city to another is labeled with the fraction of people living in the first city who work in the second city. (For example, $\frac{1}{4}$ of the people who live in A work in B.) How many people work in A?

在 Markovia 国，有三个城市：A，B，C。有 100 人在 A 居住，有 120 人在 B 居住，有 160 人在 C 居住。每个人都在这三个城市之一工作，并且可能在自己居住的城市工作。图中箭头表示从一个城市到另一个城市工作的人数的比例（例如，$\frac{1}{4}$的城市 A 的居民在城市 B 工作）。问有多少人在城市 A 工作?

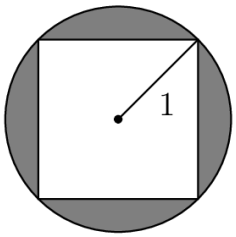


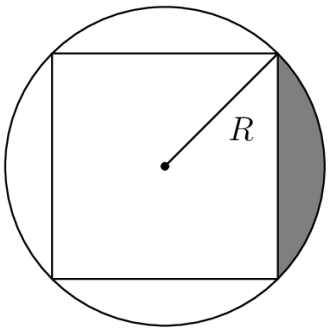
(A) 55 **(B)** 60 **(C)** 85 **(D)** 115 **(E)** 160

Problem 18

The circle shown below on the left has a radius of 1 unit. The region between the circle and the inscribed square is shaded. In the circle shown on the right, one quarter of the region between the circle and the inscribed square is shaded. The shaded regions in the two circles have the same area. What is the radius R, in units, of the circle on the right?

左下图中的圆的半径为 1 个单位。圆和内接正方形之间的区域被涂为灰色。对于右下图中的圆，圆与内接正方形之间区域的四分之一被涂为灰色。两个圆中灰色区域的面积相等。问右图中圆的半径 R 是多少个单位?





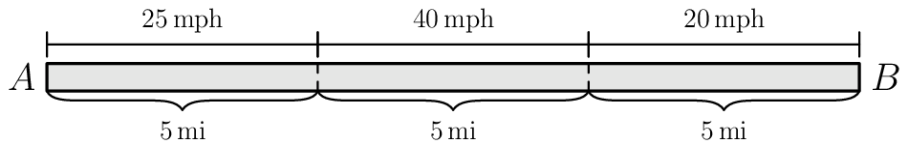
(A) $\sqrt{2}$ **(B)** 2 **(C)** $2\sqrt{2}$ **(D)** 4 **(E)** $4\sqrt{2}$

Problem 19

Two towns, A and B, are connected by a straight road, 15 miles long. Traveling

from town A to town B, the speed limit changes every 5 miles: from 25 to 40 to 20 miles per hour (mph). Two cars, one at town A and one at town B, start moving toward each other at the same time. They drive at exactly the speed limit in each portion of the road. How far from town A, in miles, will the two cars meet?

两个城市A和B通过一条 15 英里的直路相连。从城市A到城市B，每 5 英里速度限制会发生变化：从 25 英里每小时(mph)到 40 英里每小时，再到 20 英里每小时。两辆车，一辆在城市A，一辆在城市B，同时开始向对方行驶。它们在每个路段都精确遵守限速行驶。两车将在距离城市A多远的地方相遇?



(A) 7.75 **(B)** 8 **(C)** 8.25 **(D)** 8.5 **(E)** 8.75

Problem 20

Sarika, Dev, and Rajiv are sharing a large block of cheese. They take turns cutting off half of what remains and eating it: first Sarika eats half of the cheese, then Dev eats half of the remaining half, then Rajiv eats half of what remains, then back to Sarika, and so on. They stop when the cheese is too small to see. About what fraction of the original block of cheese does Sarika eat in total?

Sarika，Dev，Rajiv 正在分享一大块奶酪。他们轮流把剩余的奶酪切下一半并吃掉：首先 Sarika 吃掉奶酪的一半，然后 Dev 吃掉剩余部分的一半，接着 Rajiv 吃掉剩余部分的一半，接着又回到 Sarika，以此类推。当奶酪小到肉眼几乎看不见时，他们停止。问 Sarika 总共大约吃掉了奶酪的几分之几?

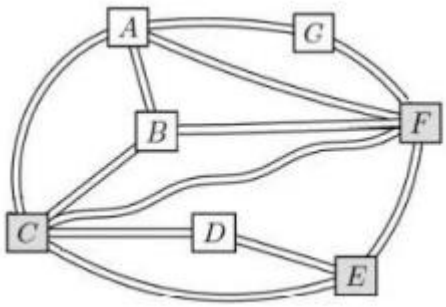
(A) $\frac{4}{7}$ **(B)** $\frac{3}{5}$ **(C)** $\frac{2}{3}$ **(D)** $\frac{3}{4}$ **(E)** $\frac{7}{8}$

Problem 21

The Konigsberg School has assigned grades 1 through 7 to pods A through G, one grade per pod. Some of the pods are connected by walkways, as shown in the figure below. The school noticed that each pair of connected pods has been assigned grades differing by 2 or more grade levels. (For example, grades 1 and

2 will not be in pods directly connected by a walkway.) What is the sum of the grade levels assigned to pods $C, E,$ and F?

Konigsberg School 将 1 年级到 7 年级分配到了 A 到 G 七个区域，每个区域对应 一个年级。如下图所示，一些区域之间有走廊相连。学校发现，每一对相连区域 内所安排的年级至少相差 2（例如，1 年级和 2 年级不会分配到直接相连的区域）。 问分配到 C，E，F 区域的年级的数字的和是多少?

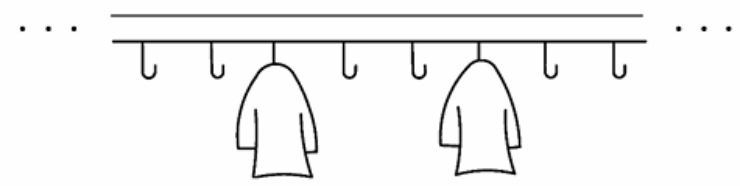


(A) 12 **(B)** 13 **(C)** 14 **(D)** 15 **(E)** 16

Problem 22

A classroom has a row of 35 coat hooks. Paulina likes coats to be equally spaced, so that there is the same number of empty hooks before the first coat, after the last coat, and between every coat and the next one. Suppose there is at least 1 coat and at least 1 empty hook. How many different numbers of coats can satisfy Paulina's pattern?

教室有一排 35 个衣帽钩。Paulina 喜欢让衣服间隔均匀，即每件衣服之间、第一件衣服前面和最后一件衣服后面都有相同数量的空衣帽钩。假设至少有 1 件衣服和 1 个空钩。问有多少种衣服数量可以满足 Paulina 的要求?



(A) 2 **(B)** 4 **(C)** 5 **(D)** 7 **(E)** 9

Problem 23

How many four-digit numbers have all three of the following properties?

(I) The tens and ones digit are both 9.

(II) The number is 1 less than a perfect square.

(III) The number is the product of exactly two prime numbers.

同时满足以下三个条件的四位数有多少个?

(I)十位数字和个位数字都是 9。

(II)这个数比某个完全平方数小 1。

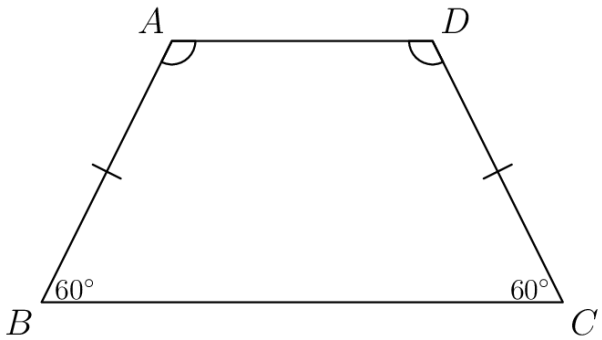
(III)这个数恰好是两个质数的乘积。

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

Problem 24

In trapezoid $ABCD$, angles B and C measure 60° and $AB = DC$. The side lengths are all positive integers, and the perimeter of $ABCD$ is 30 units. How many non-congruent trapezoids satisfy all of these conditions?

在梯形$ABCD$中，$\angle B$和$\angle C$的度数为 60°，且$AB = DC$。该梯形的所有边长都是正整数，其周长为 30。满足上述所有条件的、互不全等的梯形共有多少个?



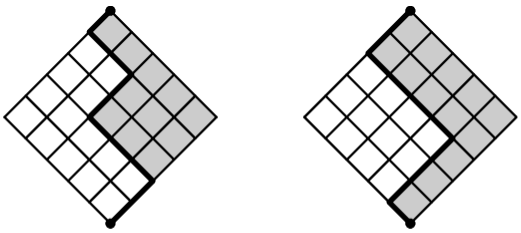
(A) 0 **(B)** 1 **(C)** 2 **(D)** 3 **(E)** 4

Problem 25

Makayla finds all the possible ways to draw a path in a 5×5 diamond-shaped grid. Each path starts at the bottom of the grid and ends at the top, always

moving one unit northeast or northwest. She computes the area of the region between each path and the right side of the grid. Two examples are shown in the figures below. What is the sum of the areas determined by all possible paths?

Makayla 找出了在 5×5 菱形网格中所有这样的路径：每条路径从网格的底部开始，到顶部结束，并且每一步只能往东北或往西北走。她计算了每条路径与网格右侧边界之间的区域面积，两个例子如图所示。所有可能路径所确定的面积之和是多少？



$\text{area} = 11$ $\text{area} = 13$

area：面积

(A) 2520 **(B)** 3150 **(C)** 3840 **(D)** 4730 **(E)** 5050

2025 AMC 8 Answer Key												
题目	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
答案	B	B	C	B	C	C	D	A	B	D	C	C	A
题目	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	
答案	E	C	C	D	B	D	A	A	D	B	E	B	