2001 AMC8

Problem 1

Casey's shop class is making a golf trophy. He has to paint 300 dimples on a golf ball. If it takes him 2 seconds to paint one dimple, how many minutes will he need to do his job?

Casey 的职业技能实践课是制作一个高尔夫奖杯。他必须在一个高尔夫球上画 300 个凹坑。如果他需要 2 秒钟才能画出一个凹坑，他需要多少分钟才能完成他的工作？

(A) 4　　(B) 6　　(C) 8　　(D) 10　　(E) 12

Problem 2

I'm thinking of two whole numbers. Their product is 24 and their sum is 11. What is the larger number?

我在想两个整数。他们的积是 24，和是 11。较大的那个数是多少？

(A) 3　　(B) 4　　(C) 6　　(D) 8　　(E) 12

Problem 3

Granny Smith has $63. Elberta has $2 more than Anjou and Anjou has one-third as much as Granny Smith. How many dollars does Elberta have?

Smith 奶奶有 63 美元。Elberta 比 Anjou 多 2 美元，Anjou 的钱是 Smith 奶奶的三分之一。那么 Elberta 有多少美元？

(A) 17　　(B) 18　　(C) 19　　(D) 21　　(E) 23

Problem 4

The digits 1, 2, 3, 4 and 9 are each used once to form the smallest possible even five-digit number. The digit in the tens place is

数字 1，2，3，4 和 9 每个使用一次，形成最小的五位偶数。则这个数的十位数字是？

(A) 1　　(B) 2　　(C) 3　　(D) 4　　(E) 9

Problem 5

On a dark and stormy night Snoopy suddenly saw a flash of lightning. Ten seconds later he heard the sound of thunder. The speed of sound is 1088 feet per second and one mile is 5280 feet. Estimated, to the nearest half-mile, how far Snoopy was from the flash of lightning?

在一个漆黑的暴风雨之夜，Snoopy 突然看到一道闪电。十秒钟后，他听到了雷声。音速是 1088 英尺每秒（一英里等于 5280 英尺）。请估算 Snoopy 离闪电有多少英里（结果精确到 0.5 英里）?

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

Problem 6

Six trees are equally spaced along one side of a straight road. The distance from the first tree to the fourth is 60 feet. What is the distance in feet between the first and last trees?

六棵树在一条笔直公路的一侧等距分布。第一棵树和第四棵树相距 60 英尺。则第一棵树和最后一棵树之间的距离是多少英尺？

(A) 90 　　 (B) 100 　　 (C) 105 　　 (D) 120 　　 (E) 140

Kites on Parade

Problems 7, 8 and 9 are about these kites.

To promote her school's annual Kite Olympics, Genevieve makes a small kite and a large kite for a bulletin board display. The kites look like the one in the diagram below. For her small kite Genevieve draws the kite on a one-inch grid. For the large kite she triples both the height and width of the entire grid.

风筝游行
问题 7、8 和 9 是关于这些风筝的。
为了宣传学校一年一度的风筝奥运会，Genevieve 制作了一个小风筝和一个大风筝作为布告牌展示。风筝看起来像下图中的风筝。Genevieve 在一英寸的网格上画的风筝作为小风筝。而将整个网格的高度和宽度增加了三倍后得到的风筝作为大风筝。
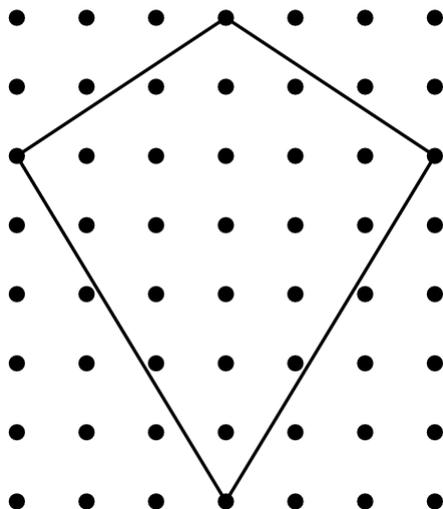
Problem 7

What is the number of square inches in the area of the small kite?

小风筝的面积是多少平方英寸？

(A) 21   (B) 22   (C) 23   (D) 24   (E) 25

Problem 8

Genevieve puts bracing on her large kite in the form of a cross connecting opposite corners of the kite. How many inches of bracing material does she need?

Genevieve 给大风筝制作了一个十字形的支架，支架即为风筝的两条对角线。她需要多少英寸的支架材料？

(A) 30   (B) 32   (C) 35   (D) 38   (E) 39

Problem 9

The large kite is covered with gold foil. The foil is cut from a rectangular piece that just covers the entire grid. How many square inches of waste material are cut off from the four corners?

大风筝由一层金箔覆盖。箔材是从一张矩形金箔纸上切得，这张矩形金箔纸刚好能够覆盖整个网格。则从四个角上切下多少平方英寸的废料？

(A) 63   (B) 72   (C) 180   (D) 189   (E) 264

Problem 10

A collector offers to buy state quarters for 2000% of their face value. At that rate how much will Bryden get for his four state quarters?

一位收藏家提出以面值的 2000％购买州政府发行的 25 美分硬币。按这个价格，Bryden 的 4 枚这样的 25 美分硬币能卖到多少钱？

(A) 20 dollars   (B) 50 dollars   (C) 200 dollars   (D) 500 dollars   (E) 2000 dollars

Problem 11

Points A, B, C and D have these coordinates: $A(3, 2), B(3, -2), C(-3, -2)$ and $D(-3, 0)$. The area of quadrilateral $ABCD$ is

点 A，B，C 和 D 有如下坐标：A（3，2），B（3，-2），C（-3，-2），D（-3，0），则四边形 ABCD 的面积为
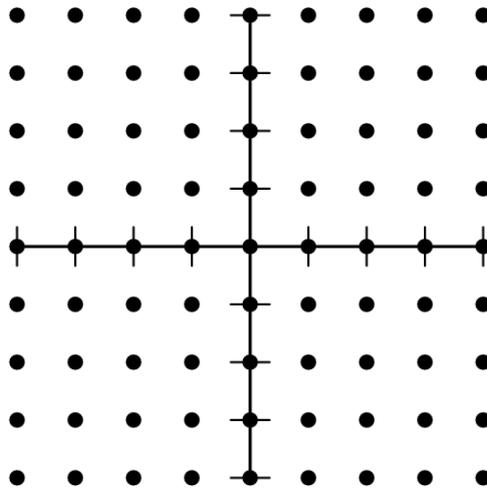
(A) 12   (B) 15   (C) 18   (D) 21   (E) 24

Problem 12

If $a \otimes b = \dfrac{a + b}{a - b}$, then $(6 \otimes 4) \otimes 3 =$

若 $a \otimes b = \dfrac{a + b}{a - b}$, 则 $(6 \otimes 4) \otimes 3 =$

(A) 4   (B) 13   (C) 15   (D) 30   (E) 72

Problem 13

Of the 36 students in Richelle's class, 12 prefer chocolate pie, 8 prefer apple, and 6 prefer blueberry. Half of the remaining students prefer cherry pie and half prefer lemon. For Richelle's pie graph showing this data, how many degrees should she use for cherry pie?

在 Richelle 班的 36 名学生中，12 人喜欢巧克力派，8 人喜欢苹果，6 人喜欢蓝莓。剩下的学生中有一半喜欢樱桃派，另一半喜欢柠檬派。Richelle 的饼图显示了这些数据，她应该用多少角度表示樱桃派？

(A) 10   (B) 20   (C) 30   (D) 50   (E) 72

Problem 14

Tyler has entered a buffet line in which he chooses one kind of meat, two different vegetables and one dessert. If the order of food items is not important, how many different meals might he choose?

- Meat: beef, chicken, pork
- Vegetables: baked beans, corn, potatoes, tomatoes
- Dessert: brownies, chocolate cake, chocolate pudding, ice cream

Tyler 进入了自助餐排队队列等待选餐，他可以选择一种肉，两种不同的蔬菜和一种甜点。如果食物的顺序不重要，这顿饭他能有多少种不同的组合？
· 肉：牛肉、鸡肉、猪肉
· 蔬菜：烤豆、玉米、土豆、西红柿
· 甜点：布朗尼，巧克力蛋糕，巧克力布丁，冰淇淋

(A) 4   (B) 24   (C) 72   (D) 80   (E) 144

Problem 15

Homer began peeling a pile of 44 potatoes at the rate of 3 potatoes per minute. Four minutes later Christen joined him and peeled at the rate of 5 potatoes per minute. When they finished, how many potatoes had Christen peeled?

Homer 开始以每分钟 3 个土豆的速度开始剥一堆土豆，这堆土豆总共有 44 个。四分钟后，Christen 加入他的行列，以每分钟 5 个土豆的速度剥皮。当他们完成时，Christen 剥了多少土豆？

(A) 20   (B) 24   (C) 32   (D) 33   (E) 40

Problem 16

A square piece of paper, 4 inches on a side, is folded in half vertically. Both layers are then cut in half parallel to the fold. Three new rectangles are formed, a large one and two small ones. What is the ratio of the perimeter of one of the small rectangles to the perimeter of the large rectangle?

一张边长 4 英寸的正方形纸垂直对折。然后将这两层沿着平行于折痕的方向均切割成两半，形成了三个新矩形，1 个大矩形和 2 个小矩形。则其中一个小矩形的周长与大矩形的周长之比是多少?

(A) $\dfrac{1}{3}$ (B) $\dfrac{1}{2}$ (C) $\dfrac{3}{4}$ (D) $\dfrac{4}{5}$ (E) $\dfrac{5}{6}$

Problem 17

For the game show *Who Wants To Be A Millionaire?*, the dollar values of each question are shown in the following table (where K = 1000).Between which two questions is the percent increase of the value the smallest?

对于游戏节目《谁想成为百万富翁？》，每个问题的价值（单位：美元）如下表所示（其中 K ＝1000）。在哪两个问题之间，哪两个价值增加的百分比最小?

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Value	100	200	300	500	1K	2K	4K	8K	16K	32K	64K	125K	250K	500K	1000K

(A) From 1 to 2   (B) From 2 to 3   (C) From 3 to 4   (D) From 11 to 12   (E) From 14 to 15

Problem 18

Two dice are thrown. What is the probability that the product of the two numbers is a multiple of 5?

掷两枚骰子，问得到的两个数之积为 5 的倍数的概率是多少？

(A) $\dfrac{1}{36}$ (B) $\dfrac{1}{18}$ (C) $\dfrac{1}{6}$ (D) $\dfrac{11}{36}$ (E) $\dfrac{1}{3}$

Problem 19

Car M traveled at a constant speed for a given time. This is shown by the dashed line. Car N traveled at twice the speed for the same distance. If Car N's speed and time are shown as solid line, which graph illustrates this?

汽车 M 在给定的时间内以恒定的速度行驶，其速度和时间曲线用虚线所示。汽车 N 以两倍的速度行驶了相同的距离。如果 N 车的速度和时间曲线用实线表示，则下面哪张图表说明了这一点？

(A)
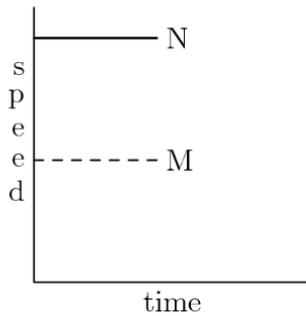
(B)
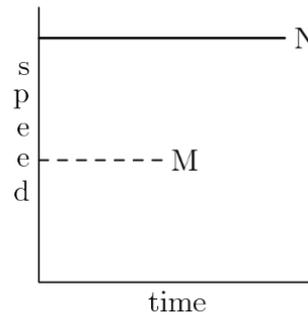
(C)
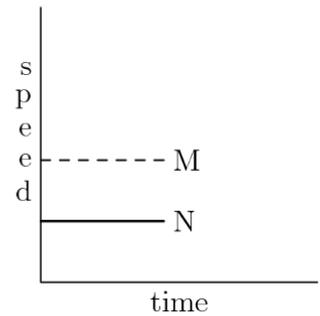
(D)
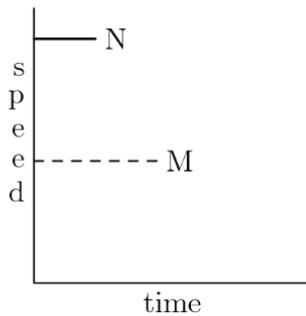
(E)
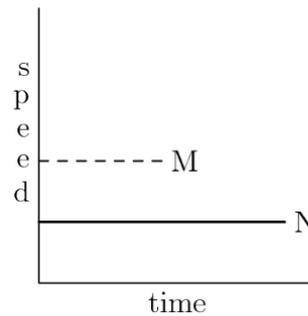
Problem 20

Kaleana shows her test score to Quay, Marty and Shana, but the others keep theirs hidden. Quay thinks, "At least two of us have the same score." Marty thinks, "I didn't get the lowest score." Shana thinks, "I didn't get the highest score." List the scores from lowest to highest for Marty (M), Quay (Q) and Shana (S).

Kaleana 向 Quay，Marty 和 Shana 展示了自己的考试成绩，但其他三人都隐藏了自己的成绩。Quay 认为:"我们中至少有两个人有相同的分数。"Marty 认为:"我没有得到最低的分数。"Shana 认为："我没有得到最高的分数。"请按从最低到最高的次序将 Marty（M）、Quay（Q）和 Shana（S）的分数列出来。

(A) S,Q,M   (B) Q,M,S   (C) Q,S,M   (D) M,S,Q   (E) S,M,Q

Problem 21

The mean of a set of five different positive integers is 15. The median is 18. The maximum possible value of the largest of these five integers is

一组五个不同正整数的平均值是 15。中位数是 18。这五个整数中最大的那个数的最大可能值为

(A) 19   (B) 24   (C) 32   (D) 35   (E) 40

Problem 22

On a twenty-question test, each correct answer is worth 5 points, each unanswered question is worth 1 point and each incorrect answer is worth 0 points. Which of the following scores is NOT possible?

在一项有 20 个问题的测试中，每个正确答案得 5 分，每个未回答的问题得 1 分，每个错误答案得 0 分。则以下哪个得分是不可能的？

(A) 90   (B) 91   (C) 92   (D) 95   (E) 97

Problem 23

Points R, S and T are vertices of an equilateral triangle, and points X, Y and Z are midpoints of its sides. How many noncongruent triangles can be drawn using any three of these six points as vertices?

点 R，S 和 T 是一个等边三角形的三个顶点，点 X，Y 和 Z 分别是边的中点。使用这六个点中的任意三个作为顶点，可以画出多少个不全等的三角形？

S

Y Z

R X T
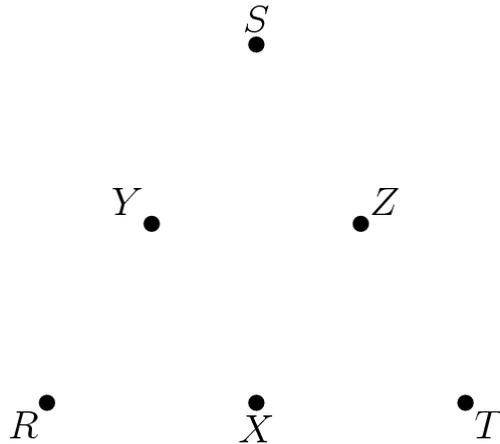
(A) 1   (B) 2   (C) 3   (D) 4   (E) 20

Problem 24

Each half of this figure is composed of 3 red triangles, 5 blue triangles and 8 white triangles. When the upper half is folded down over the centerline, 2 pairs of red triangles coincide, as do 3 pairs of blue triangles. There are 2 red-white pairs. How many white pairs coincide?

该图形的每一半由 3 个红色三角形、5 个蓝色三角形和 8 个白色三角形组成。当上半部分沿中心线向下折叠时，2 对红色三角形重合，3 对蓝色三角形重合。还有两对红－白对。那么有多少对白色三角形重合？
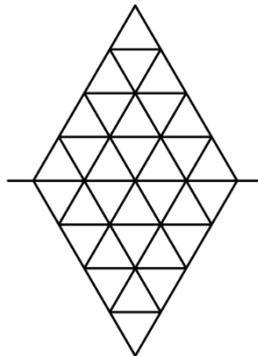
(A) 4   (B) 5   (C) 6   (D) 7   (E) 9

Problem 25

There are 24 four-digit whole numbers that use each of the four digits 2, 4, 5 and 7 exactly once. Only one of these four-digit numbers is a multiple of another one. Which of the following is it?

2、4、5 和 7 这四个数字每个恰好使用一次，一共可以组成 24 个四位整数。这 24 个四位整数中，只有一个是另一个的倍数。则这个数是下列哪一个？

(A) 5724   (B) 7245   (C) 7254   (D) 7425   (E) 7542

2001 AMC 8 Answer Key

1	2	3	4	5	6	7	8	9	10	11	12	13
D	D	E	E	C	B	A	E	D	A	C	A	D

14	15	16	17	18	19	20	21	22	23	24	25	
C	A	E	B	D	D	A	D	E	D	B	D	

2001 AMC 8 Solution

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