Think Academy

Summer AMC 8- Workshop 2

This material is designed for use in the classroom to simulate a Mock Exam.

To ensure accurate evaluation results, please DO NOT allow children to preview or complete the corresponding exercises in advance.

We will upload the classnotes (as the answers and solutions) after the class (exam).

Self-Round

1 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 ( ) .

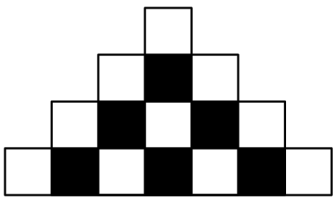
A. 1 B. 2 C. 3 D. 4 E. 9

2 Peter's family ordered a 12-slice pizza for dinner. Peter ate one slice and shared another slice equally with his brother Paul. What fraction of the pizza did Peter eat? ( ) .

A. $\frac{1}{24}$ B. $\frac{1}{12}$ C. $\frac{1}{8}$ D. $\frac{1}{6}$ E. $\frac{1}{4}$

3 A "stair-step" figure is made of alternating black and white squares in each row.

Rows through are shown. All rows begin and end with a white square. The number of black squares in the 37th row is ( ) .



A. 34 B. 35 C. 36 D. 37 E. 38

4 Using only pennies, nickels, dimes, and quarters, what is the smallest number of coins Freddie would need so he could pay any amount of money less than a dollar? ( ) .

A. 6 B. 10 C. 15 D. 25 E. 99

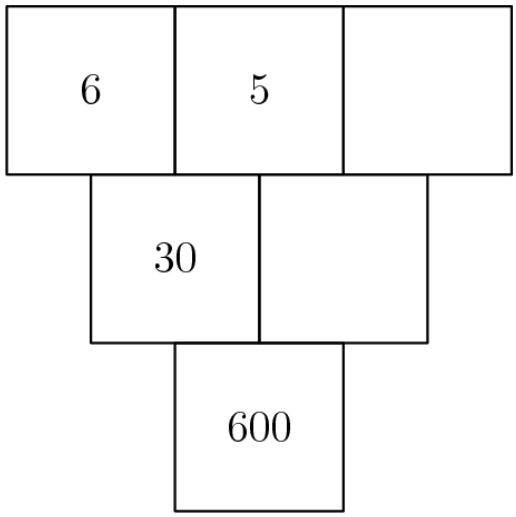
5 Handy Aaron helped a neighbor $1\frac{1}{4}$ hours on Monday, 50 minutes on Tuesday, from $8:20$ to $10:45$ on Wednesday morning, and a half-hour on Friday. He is paid $\$3$ per hour. How much did he earn for the week? ( ) .

A. $\$8$ B. $\$9$ C. $\$10$ D. $\$12$ E. $\$15$

6 Steve's empty swimming pool will hold $24,000$ gallons of water when full. It will be filled by 4 hoses, each of which supplies 2.5 gallons of water per minute. How many hours will it take to fill Steve's pool? ( ) .

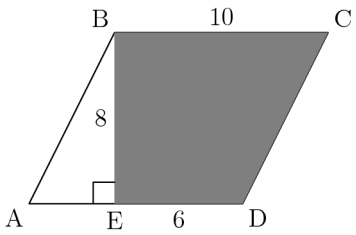
A. 40 B. 42 C. 44 D. 46 E. 48

7 The number in each box below is the product of the numbers in the two boxes that touch it in the row above. For example, $30 = 6 \times 5$. What is the missing number in the top row? ( ) .



A. 2 B. 3 C. 4 D. 5 E. 6

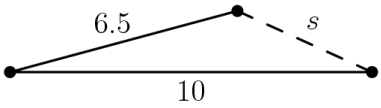
8 The area of the shaded region $BEDC$ in parallelogram $ABCD$ is ( ) .



A. 24 B. 48 C. 60 D. 64 E. 80

In-Class

9 The sides of a triangle have lengths 6.5, 10, and s, where s is a whole number. What is the smallest possible value of s?



A. 3 B. 4 C. 5 D. 6 E. 7

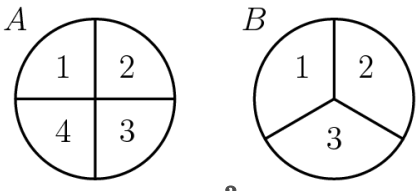
10 A board game spinner is divided into three regions labeled A, B and C. The probability of the arrow stopping on region A is $\frac{1}{3}$ and on region B is $\frac{1}{2}$. The probability of the arrow stopping on region C is ( ) .

A. $\frac{1}{12}$ B. $\frac{1}{6}$ C. $\frac{1}{5}$ D. $\frac{1}{3}$ E. $\frac{2}{5}$

11 Thirteen black and six white hexagonal tiles were used to create the figure below. If a new figures is created by attaching a border of white tiles with the same size and shape as the others, what will be the difference between the total number of white tiles and the total number of black tiles in the new figure? ( ) .

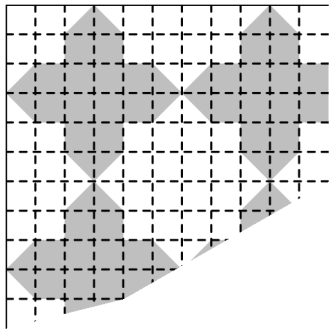
A. 5 B. 7 C. 11 D. 12 E. 18

12 Spinners A and B are spun. On each spinner, the arrow is equally likely to land on each number. What is the probability that the product of the two spinners' numbers is even? ( ) .



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

13 A corner of a tiled floor is shown. If the entire floor is tiled in this way and each of the four corners looks like this one , then what fraction of the tiled floor is made of darker tiles? ( ) .



A. $\frac{1}{3}$ B. $\frac{4}{9}$ C. $\frac{1}{2}$ D. $\frac{5}{9}$ E. $\frac{5}{8}$

14 Mr. Harman needs to know the combined weight in pounds of three boxes he wants to mail. However, the only available scale is not accurate for weights less than 100 pounds or more than 150 pounds. So the boxes are weighed in pairs in every possible way. The results are 122,125 and 127 pounds. What is the combined weight in pounds of the three boxes? ( ) .

A. 160 B. 170 C. 187 D. 195 E. 354

15 The lengths of the sides of a triangle in inches are three consecutive integers. The length of the shortest side is 30% of the perimeter. What is the length of the longest side? ( ) .

A. 7 B. 8 C. 9 D. 10 E. 11

16 There are 270 students at Colfax Middle School, where the ratio of boys to girls is $5:4$. There are 180 students at Winthrop Middle School, where the ratio of boys to girls is $4:5$. The two schools hold a dance and all students from both schools attend. What fraction of the students at

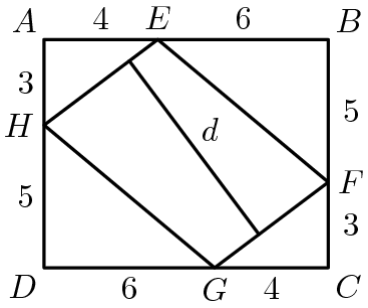
the dance are girls? ( ) .

A. $\frac{7}{18}$ B. $\frac{7}{15}$ C. $\frac{22}{45}$ D. $\frac{1}{2}$ E. $\frac{23}{45}$

17 In a jar of red, green, and blue marbles, all but 6 are red marbles, all but 8 are green, and all but 4 are blue. How many marbles are in the jar? ( ) .

A. 6 B. 8 C. 9 D. 10 E. 12

18 In the figure, $ABCD$ is a rectan gle and $EFGH$ is a parallelogram. Usin g the measurements given in the figure, what is the length d of the segment that is perpendicular to $\overline{HE}$ and $\overline{FG}$? ( ) .



A. 6.8 B. 7.1 C. 7.6 D. 7.8 E. 8.1