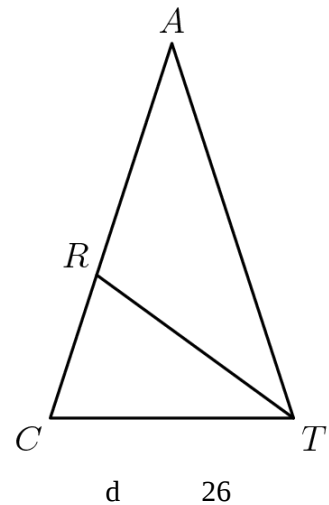


Round 3

- 1 Triangle CAT is isocseles and has vertex angle A measure 36° . If TR bisects angle ATC , the the measure of angle CRT is

a 36° b 54°
c 72° d 84°



- 2 The product of two whole numbers is 78. The sum of these numbers is 19. Find the larger of the two numbers.

a 6 b 12 c 13 d 26

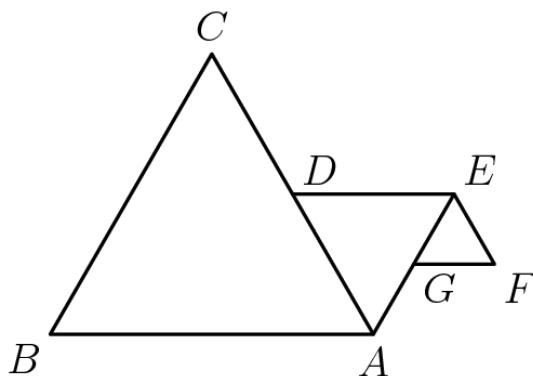
- 3 The digits 2, 4, 5, 6, and 7 are each used once to form the smallest possible 5-digit even number. What number is in the tens place?

a 4 b 5 c 8 d 7

- 4 The operation $\oplus$ is defined for all nonzero numbers by $a \oplus b = \frac{a^2}{b}$. Determine $[(1 \oplus 2) \oplus 3] - [1 \oplus (2 \oplus 3)]$

a $-\frac{2}{3}$ b $-\frac{1}{4}$ c $\frac{1}{4}$ d $\frac{2}{3}$

- 5 Triangles ABC , ADE , and EFG are all equilateral. Points $\underline{D}$ and G are midpoints of side AC and AE , respectively. If $AB = 4$, what is the perimeter of figure $ABCDEFG$?



a 12 b 13 c 15 d 18

- 6 Along sides of roads between villages in a certain rural area trees are planted. Six trees are equally spaced along a straight road between two close villages. The first tree is at the same distance from the first village as the space between the trees. Also, the distance between the last tree and the second village is at the same distance. The distance between the second tree and the fifth tree is 60 m. What is the distance between two villages?
- a 130 m b 140 m c 150 m d 160 m
- 7 Find the area of the quadrilateral $ABCD$ whose vertices are: $A(3, 2)$, $B(3, -2)$, $C(-3, -2)$, $D(-3, 0)$.
- a 12 b 15 c 18 d 24
- 8 For a math report, Medi studied his 36 classmates (including himself) about their preferred subject. 12 mentioned math as their preferred subject, 8 Languages, and 6 preferred art. Half of the remaining students preferred science or history. For his pie graph showing this data, how many degrees should he use for science?
- a 20 b 30 c 50 d 72
- 9 Your school cafeteria offers a fixed menu where you choose one kind of meat, two different vegetables and one dessert. If the order of food items is not important, how many different meals might you choose?
- Meat: beef, chicken, pork
 - Vegetables: baked beans, corn, potatoes, tomatoes
 - Dessert: brownies, chocolate cake, chocolate pudding, ice cream
- a 24 b 72 c 80 d 144
- 10 In order for Marco to walk a kilometer in his rectangular backyard, he must walk the length 25 times or walk its perimeter 10 times. What is the area of Marco's backyard in square meters?
- a 200 b 400 c 500 d 1000

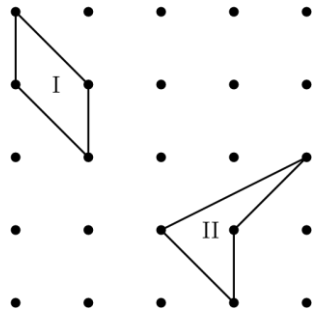
- 11** Tom works at a bakery after school to earn some pocket money. The bakery is famous for their apple pies. One evening he began peeling a pile of 44 apples at the rate of 3 apples per minute. Four minutes later Chris joined him and peeled at the rate of 5 apples per minute. When they finished, how many potatoes had Chris peeled?

a 34 b 32 c 24 d 20

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

a $\frac{1}{36}$ b $\frac{1}{18}$ c $\frac{1}{6}$ d $\frac{11}{36}$

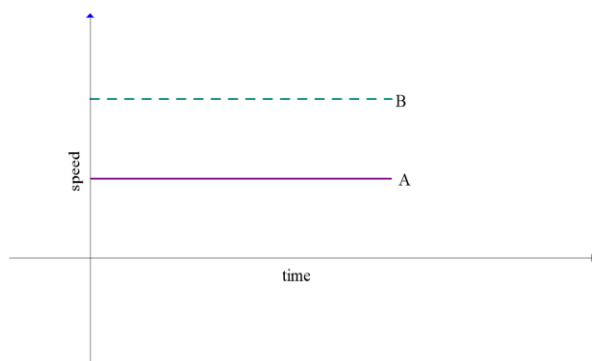
- 13** Consider these two geoboard quadrilaterals. Which of the following statements is true?



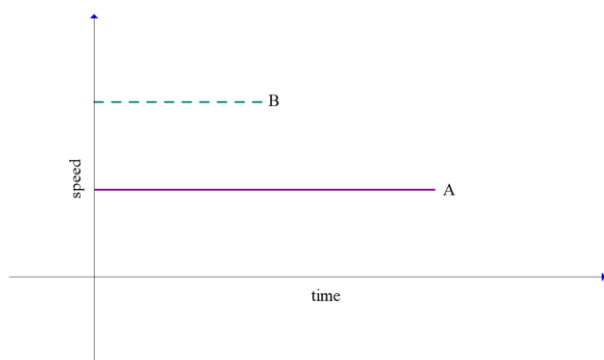
- a The area of quadrilateral I is less than the area of quadrilateral II
- b The quadrilaterals have the same area and the same perimeter.
- c The quadrilaterals have the same area, bu perimeter of I is more than perimeter of II.
- d The quadrilaterals have the same area, bu perimeter of I is less than perimeter of II.

- 14 Two cars travel at a constant speed for the same distance. Car A travels at a speed half of the speed of car B. Car A's speed is shown by a solid line and Car B's the dashed line. Which graph illustrates the situation?

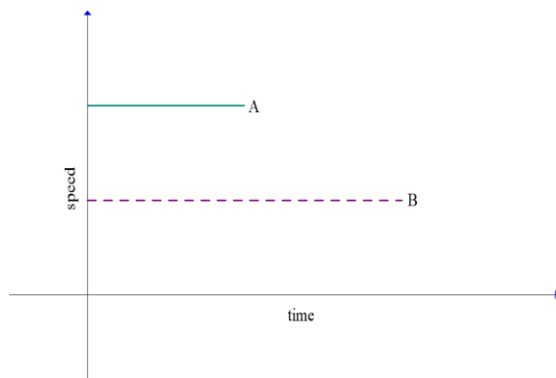
a



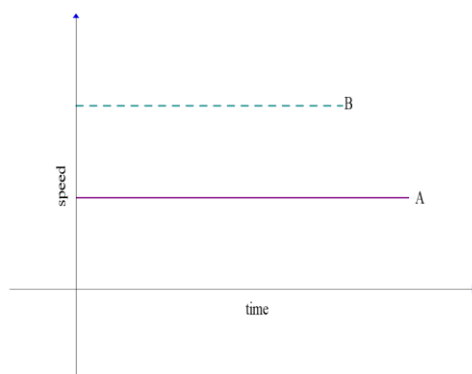
b



c

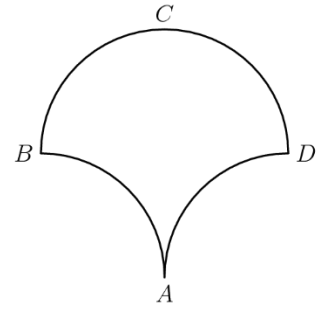


d



- 15 Three arcs of congruent circles with radius 10 cm bound the region shown. Arcs AB and AD are quarter-circles, and arc BCD is a semicircle. What is the area, in square centimeters, of the region?

a 100 b $20 + 10\pi$
c 200 d 100π



- 16 You toss one coin and your friend tosses two coins. The probability that you both get the same number of tails is

a $\frac{1}{4}$ b $\frac{3}{8}$ c $\frac{2}{3}$ d $\frac{3}{4}$

- 17 A list of 5 numbers has an average of 8.4. The average of the first 3 numbers is 7, and the average of the last 3 numbers is 10. Then, the number common to both sets of 3 numbers is

a 8 b 8.4 c 9 d 9.2

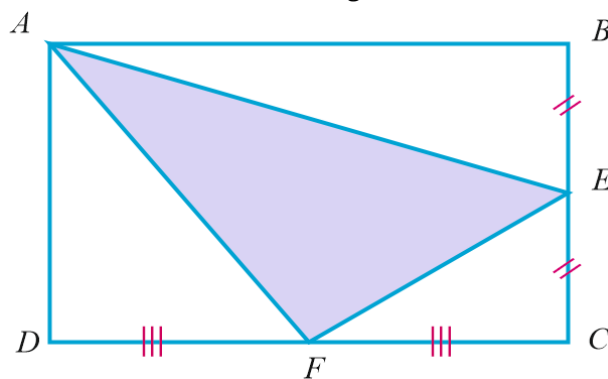
- 18 Karen shows her test score to Paul, Marco and Sophia, but the others keep theirs hidden. Paul thinks, "At least two of us have the same score." Marco thinks, "I didn't get the lowest score." Sophia thinks, "I didn't get the highest score." List the scores from lowest to highest for Marco (M), Paul (P) and Sophia (S).

a S, P, M b P, M, S c P, S, M d S, M, P

- 19 On each twenty-question round, each correct answer is worth 4 points, each unanswered question is worth 1 point and each incorrect answer is worth 0 points. Which of the following scores is **NOT** possible?

a 56 b 64 c 76 d 78

- 20 $ABCD$ is a rectangle with an area of 72 cm^2 . E and F are the midpoints of their corresponding sides as shown. Find the area of triangle AEF .



a 18 cm^2 b 27 cm^2 c 30 cm^2 d 36 cm^2