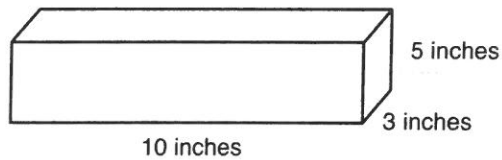# Team Name_____

MATHLETES CHALLENGE 2017

Round 02

TEST 2

1. Which two-dimensional figure results from a square pyramid being sliced horizontally and parallel to the base?
   - (A) Triangle
   - (B) Square
   - (C) Circle
   - (D) Pentagon

2. Which two-dimensional figure results from a square pyramid being sliced vertically and perpendicular to the base?
   - (A) Triangle
   - (B) Square
   - (C) Circle
   - (D) Pentagon

3. Which of the following measurements are the correct dimensions of the cross section resulting from a perpendicular slice to the base?
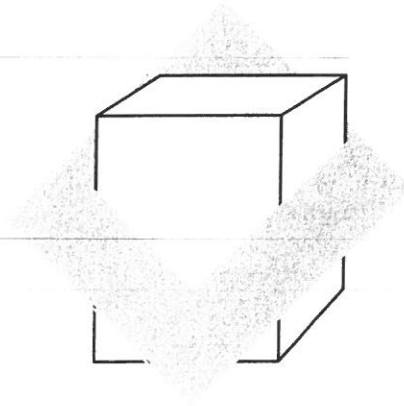

5 inches

3 inches

10 inches

   - (A) 3 in. by 10 in.
   - (B) 5 in. by 10 in.
   - (C) 3 in. by 5 in.
   - (D) 5 in. by 5 in.

4. A diagonal slice of a square pyramid will result in which two-dimensional figure?
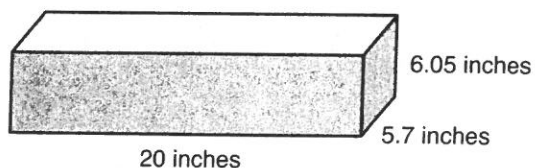

- Ⓐ Triangle
- Ⓑ Square
- Ⓒ Rectangle
- Ⓓ Trapezoid

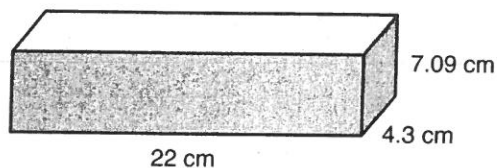5. A diagonal slice of a cube will result in which two-dimensional figure?

- Ⓐ Triangle
- Ⓑ Square
- Ⓒ Rectangle
- Ⓓ Trapezoid

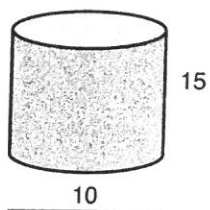**6.** What is the surface area of the rectangular prism shown below?

6.05 inches

5.7 inches

20 inches

(A) 689.7 in.^{2}

(B) 383.485 in.^{2}

(C) 538.97 in.^{2}

(D) 31.75 in.^{2}

7. What is the volume of the rectangular prism shown below?

7.09 cm

4.3 cm

22 cm

(A) 670.714 cm^2

(B) 33.39 cm^2

(C) 670.714 cm^3

(D) 33.39 cm^3

8. What is the surface area of the cylinder shown below?

15

10

(A) 628.3 units^2

(B) 534.1 units^2

(C) 1099.6 units^2

(D) 1178.1 units^2

Jim wanted to analyze the amounts of colored candies that are in a typical bag from a candy company and his data is recorded below.

	Red	Green	Yellow	Blue
Bag 1	6	5	2	1
Bag 2	8	3	0	2
Bag 3	6	4	3	2

9. Which of the following inferences can be concluded from his data?
- Ⓐ On average there are more yellow candies than blue.
- Ⓑ Most bags have 15 candies in them.
- Ⓒ On average 29% of the bag is green candies.
- Ⓓ Red candies are most people's favorite.

10. To improve his analysis, Jim should
- Ⓐ recount the candies in each bag.
- Ⓑ sample more bags of candies.
- Ⓒ sample a different candy company's bags.
- Ⓓ only count the first five candies that shake out of each bag.

. . . .

11. Which of the following is the probability of rolling an even number on a regular 8-sided number cube and then a number greater than 4 on a regular 6-sided number cube?

- Ⓐ $\dfrac{2}{12}$

- Ⓑ $\dfrac{6}{14}$

- Ⓒ $\dfrac{1}{2}$

- Ⓓ $\dfrac{6}{48}$

12. Theresa has 6 different color shirts and 4 different types of pants to wear to school. Which of the following models could she use to simulate the probability of randomly wearing a certain outfit that consists of one shirt and one pair of pants?
- Ⓐ Flipping a coin 6 times and rolling a 6-sided number cube
- Ⓑ Placing all the shirt colors in a hat and then flipping a coin for the pants
- Ⓒ Rolling a 6-sided number cube and then spinning a spinner divided into 25% sections
- Ⓓ Spinning a spinner that has 6 equal sections and then rolling a 6-sided number cube

13. The movie theater has five movies showing that Christian would like to watch and he can't decide which to go see. Which of the following probability models would help him determine what movie to go see?

Ⓐ Flipping a fair coin

Ⓑ Rolling a fair 6-sided die

Ⓒ Picking one of 4 marbles out of a bag

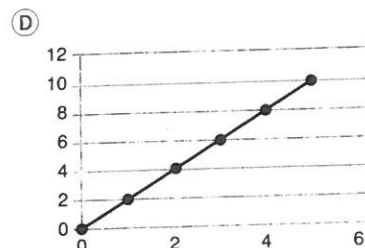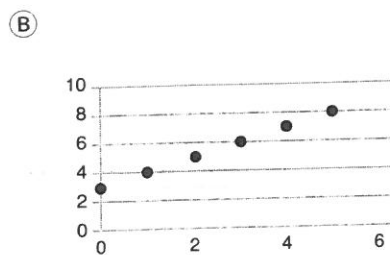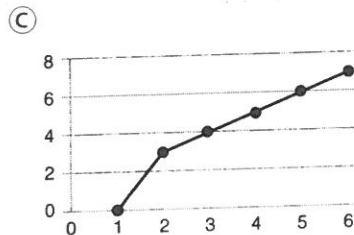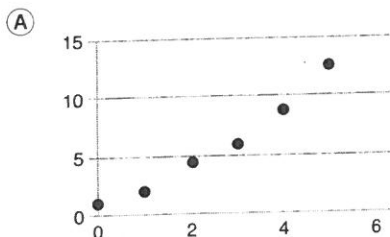Ⓓ Spinning a spinner that is equally marked A, B, C, D, E

14. Andrew needs to install new programs onto multiple computers at his job. He estimates that he installed 6 programs onto a computer in 2 hours and 18 minutes. Which rate can he use to help him plan how long it will take to install all the programs he has onto all the computers he has on his list?

Ⓐ 23 minutes per program

Ⓑ 6 programs in 2.3 hours

Ⓒ 2.3 programs per 1 hour

Ⓓ 2.3 programs per 1 minute

15. Which of the following graphs represents a proportional relationship?

Ⓐ

Ⓒ

Ⓑ

Ⓓ

16. On average, Richard is able to plow 4 driveways in 1 hour and 45 minutes. Which equation can be used to calculate the number of driveways, d, Richard can plow in a certain amount of minutes, m?

Ⓐ $26.25m = d$

Ⓑ $.03m = d$

Ⓒ $m = 26.25d$

Ⓓ $m = .03d$

17. Which of the following charts represents a proportional relationship?

(A)

0	4
1	8
2	12
3	16
4	20

(C)

0	2
1	6
2	10
3	14
4	18

(B)

0	0
1	3
2	6
3	9
4	12

(D)

0	4
1	5
2	6
3	7
4	8

18. Which of the following equations would directly result in finding the discounted price, P, if there is a 30% off sale when you buy a kayak, k?

(A) $P = 0.70k$

(B) $P = 0.30k$

(C) $P = k - 0.70$

(D) $P = k - 0.30$

19. What is the original price of a television for which the total cost with 7% tax is $481.50?

(A) $33.70

(B) $474.50

(C) $450.00

(D) $515.21

20. Chris's spelling scores went from a 75 to an 87. Which of the following represents the percent of increase in Chris's scores?

(A) 12%

(B) 13%

(C) 14%

(D) 16%

2017 Round 02 Test 01

1. C
2. A
3. D
4. B
5. A
6. A
7. B
8. C
9. A
10. D
11. B
12. A
13. B
14. D
15. A
16. D
17. C
18. B
19. D
20. A

Round 02 Test 02

1. B
2. A
3. C
4. D
5. C
6. C
7. C
8. A
9. C
10. B
11. A
12. C
13. D
14. A
15. D
16. C
17. B
18. A
19. C
20. D