Team Name_____

MATHLETES CHALLENGE 2017

Championship Round

TEST 1

1. **If y is proportional to x, and y = 4 when x = 6, what is the constant of proportionality between them (the ratio of x to y)?**

Ⓐ $\frac{4}{6}$

Ⓑ $\frac{2}{3}$

Ⓒ $\frac{3}{2}$

Ⓓ 3

2. **John eats a bowl of cereal for 3 of his 4 meals each day. He finishes two gallons of milk in eight days. How much milk does John use for one bowl of cereal? (Assume he only uses the milk for his cereal.)**

Ⓐ One-twelfth of a gallon of milk
Ⓑ One cup of milk
Ⓒ Two cups of milk
Ⓓ One-sixth of a gallon of milk

3. **A recipe to make a cake calls for three fourths of a cup of milk. Mary used this cake as the first layer of a wedding cake. The second layer was half the size of the first layer, and the third layer was half the size of the second layer. How much milk would be used for the entire wedding cake?**

Ⓐ One and two-thirds cups of milk
Ⓑ One and one-third cups of milk
Ⓒ One and five-sixteenths cups of milk
Ⓓ One cup of milk

4. **One third of a quart of paint covers one fourth of a basketball court. How much paint does it take to paint the entire basketball court?**

   Ⓐ one and one-third quarts
   Ⓑ one quart
   Ⓒ one and one-fourth quarts
   Ⓓ one and three-fourths quarts

5. **The total cost of 100 pencils purchased at a constant rate is $39.00. What is the unit price?**

   Ⓐ $39.00
   Ⓑ $3.90
   Ⓒ $0.39
   Ⓓ $0.039

6. **A construction worker was covering the bathroom wall with tiles. He covered three-fifths of the wall with 50 tiles. How many tiles will it take to cover the entire wall?**

   Ⓐ 83 tiles
   Ⓑ 83 and one-third tiles
   Ⓒ 85 tiles
   Ⓓ 83 and one-half tiles

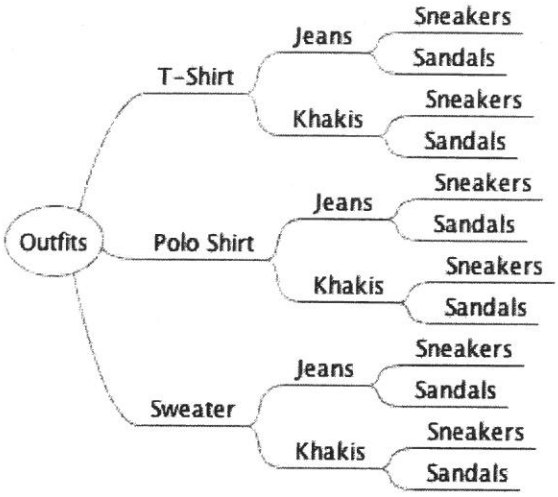
7. **Jim ran four-fifths of a mile and dropped out of the 1600 meter race. His pace was 12 miles an hour until the point he dropped out of the race. How many minutes did he run?**

   Ⓐ 4 minutes and 30 seconds
   Ⓑ 4 minutes
   Ⓒ 4 minutes and 20 seconds
   Ⓓ 4 minutes and 10 seconds

8. **Ping played three-fourths of a football game. The game was three and a half hours long. How many hours did Ping play in this game?**

   Ⓐ 2 hours 37 minutes
   Ⓑ 2 hours 37 minutes and 30 seconds
   Ⓒ 2 hours 37 minutes and 20 seconds
   Ⓓ 2 hours 37 minutes and 10 seconds

9. **The following tree diagram represents Jane's possible outfits:**



How many different outfits can Jane make based on this diagram?

Ⓐ 2
Ⓑ 12
Ⓒ 16
Ⓓ 4

10. **Felix flipped a coin 8 times and got the following results: H, H, T, H, H, T, T, H. If these results were typical for that coin, what are the odds of flipping a heads with that coin?**

Ⓐ 3 out of 5
Ⓑ 5 out of 8
Ⓒ 3 out of 8
Ⓓ 1 out of 2

11. **Bridgette rolled a six-sided die 100 times to test the frequency of each number's appearing. According to these statistics, how many times should a 2 be rolled out of 50 rolls?**

Number	Frequency
1	18%
2	20%
3	16%
4	11%
5	18%
6	17%

Ⓐ 10 times
Ⓑ 20 times
Ⓒ 12 times
Ⓓ 15 times

12. **Randomly choosing a number out of a hat 50 times resulted in choosing an odd number a total of four more times than the number of times an even number was chosen. How many times was an even number chosen from the hat?**

Ⓐ 27 times
Ⓑ 21 times
Ⓒ 29 times
Ⓓ 23 times

13. **8 out of the last 12 customers at Paul's Pizza ordered pepperoni pizza. According to this data, what is the probability that the next customer will NOT order pepperoni pizza?**

Ⓐ 1 out of 3
Ⓑ 4 out of 5
Ⓒ 1 out of 2
Ⓓ 2 out of 5

14. **Tim wraps presents at a local gift shop. If it takes 2.5 meters of wrapping paper per present, how many can Tim wrap if he has 50 meters of wrapping paper?**

Ⓐ 18 meters
Ⓑ 20 meters
Ⓒ 15 meters
Ⓓ 17 meters

15. **Name the property demonstrated by the equation.**

$11 + (8 + 6) = (y + 8) + 6$

Ⓐ 11, Commutative Property of Addition
Ⓑ 11, Associative Property of Addition
Ⓒ 11, Distributive Property
Ⓓ 11, Associative Property of Multiplication

16. **In the linear equation $p = 2c + 1$, c represents the number of couples attending a certain event, and p represents the number of people at that event.**

If there are 7 couples attending, how many people will be present?

Ⓐ 7 people
Ⓑ 14 people
Ⓒ 15 people
Ⓓ 16 people

17. **The ratio (by volume) of salt to sugar in a certain mixture is 4 to 8. If the total volume of the solution is 300 cubic feet, what is the volume of sugar in the mixture?**

Ⓐ 200 cubic feet
Ⓑ 199 cubic feet
Ⓒ 201 cubic feet
Ⓓ 136 cubic feet

18. **Which of the following sequences follows the rule $(8 + t^2) - 2t$ where t is equal to the number's position in the sequence?**

Ⓐ 7, 8, 11, 16, 23, ...
Ⓑ 9, 12, 17, 24, 33 ...
Ⓒ 3, 4, 5, 6, 7, ...
Ⓓ 7, 10, 15, 22, 31, ...

19. Use the table below to answer the question that follows:

Month	Avg Temp.
January	24°F
February	36°F
March	55°F
April	65°F
May	72°F
June	78°F

What is difference between the mean temperature of the first four months of the year and the mean temperature of the next two months?

Ⓐ 15 degrees
Ⓑ 20 degrees
Ⓒ 25 degrees
Ⓓ 30 degrees

20. Use the table below to answer the question:

Month	Avg Temp.
January	24°F
February	36°F
March	55°F
April	65°F
May	72°F
June	78°F

If the temperature in January was 54°F instead of 24°F, by how much would the mean temperature for the six months increase?

Ⓐ 5°F
Ⓑ 10°F
Ⓒ 30°F
Ⓓ 35°F

2017 Championship Test 01	Championship Test 02
1. C	1. B
2. A	2. B
3. C	3. A
4. A	4. A
5. C	5. D
6. B	6. B
7. B	7. B
8. B	8. C
9. B	9. A
10. B	10. A
11. A	11. C
12. D	12. D
13. A	13. D
14. B	14. C
15. B	15. A
16. C	16. C
17. A	17. D
18. A	18. B
19. D	19. A
20. A	20. A