



MONTANA COUNCIL OF TEACHERS OF MATHEMATICS  
2018 MATH CONTEST  
**FOUNDATIONS TEST**

**DIRECTIONS: DO NOT WRITE ON THIS TEST. Place the best answer for each question on the separate answer sheet.**

- We start our bike race at 10:32 a.m. The first person crosses the finish line 238 minutes later. What time is it?  
A) 2:30 a.m.      B) 2:34 p.m.      C) 2:30 p.m.      D) 3:58 p.m.      E) none of these
- Erin makes a series of deposits and withdraws from her saving account. She starts with a balance of \$122, she withdraws \$27 and then another \$32. Then she deposits \$58 that she made babysitting. What is her current bank balance?  
A) \$5      B) \$121      C) \$123      D) \$239      E) none of these
- A streetcar in San Francisco pulls away from a stop at 2:30 PM with 15 passengers in the car. It makes stops every 15 minutes. On every hour and on every half hour, 22 passengers get on the streetcar. On every quarter after the hour and on every quarter to the hour, 14 people get off the streetcar. How many passengers are on the streetcar at 5:40 PM?  
A) 49      B) 60      C) 63      D) 77      E) none of these
- Charlie has opened his own bakery. He uses  $2\frac{1}{2}$  cups of flour in each batch of cookies that he makes. If the 15 lbs pound bag of flour costs \$13.68 and it contains 228-quarter cup servings. How much does the flour in one batch of cookies cost to the nearest dime?  
A) \$0.48      B) \$0.50      C) \$0.54      D) \$0.60      E) none of these
- At camp Castle Rock the ratio of girls to boys is 1:3. Castle Rock currently has a TOTAL enrollment of 976 campers. How would enrolment have to increase to make the ratio of girls to boys be 1:2?  
A) add 122 girls      B) add 122 boys      C) add 325 girls      D) add 325 boys      E) none of these
- When evaluating,  $4 - 8 + 7 \div 3 + 4 * 6$ , which operation should you perform first?  
A) addition      B) subtraction      C) multiplication      D) division      E) none of these
- Solve for x:  $\frac{3}{\frac{1}{6}} = \frac{9}{x}$   
A)  $\frac{1}{18}$       B)  $\frac{1}{12}$       C)  $\frac{1}{2}$       D)  $\frac{9}{2}$       E) none of these
- 0.05% of 10,000 equals?  
A) 5      B) 50      C) 500      D) 5000      E) none of these
- A new spa opens for the first time on Wednesday, January 2<sup>nd</sup>. If the spa is only open Monday through Friday, on what day will it have been open for 21 days?  
A) January 22<sup>nd</sup>      B) January 23<sup>rd</sup>      C) January 30<sup>th</sup>      D) January 31<sup>st</sup>      E) none of these
- If a case of eggs contains 12 dozen eggs, how many eggs are in two crates of 12 cases each?  
A) 48      B) 144      C) 288      D) 1728      E) none of these
- 100 trillion divided by 10 million equals  
A) 100 Thousand      B) 1 Million      C) 10 Million      D) 100 Million      E) none of these

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**12.** What number is half way between 85,762,374 and 72,904,736?

- A) 79,333,554      B) 79,333,555      C) 79,333,556      D) 79,333,557      E) none of these

**13.** Which quadrant is the point (-2, 9)?

- A) I      B) II      C) III      D) IV      E) none of these

**14.** Kiersten surveyed 18 students at school about their favorite sport. Of the students surveyed, 8 said hockey was their favorite sport. What is the probability that the next student surveyed WILL NOT pick hockey as their favorite sport? Simplify your answer.

- A)  $\frac{4}{9}$       B)  $\frac{5}{9}$       C)  $\frac{8}{18}$       D)  $\frac{10}{18}$       E) none of these

**15.** What is the median of  $\frac{1}{6}, \frac{2}{5}, \frac{3}{4}, \frac{4}{3}, \frac{5}{2}, \frac{6}{1}$ ?

- A)  $\frac{7}{12}$       B) 1      C)  $\frac{25}{24}$       D)  $\frac{669}{360}$       E) none of these

**16.** 288 minutes is what percent of one day?

- A) 10%      B) 15%      C) 20%      D) 40%      E) none of these

**17.** Ashley, the chimney sweep, puts her hat down on a square the same size as the opening of a chimney. The circular brim touches each side of the square at a single point. The perimeter of the square is 4 meters. What is the radius of the circular brim of Ashley's hat?

- A) 0.5m      B) 1m      C) 2m      D) 3m      E) none of these

**18.** Samantha is making three ingredient pizzas. She has ham, cheese, sausage, pepperoni, and pineapple. How many different combinations of 3 of these 5 choices can be made?

- A) 6      B) 8      C) 10      D) 60      E) none of these

**19.** Solve for g:  $7g - 2 = 47$

- A) 5      B) 6      C) 7      D) 8      E) none of these

**20.** Rory only has circular sprinklers so he decides to plant a circular garden. The diameter of the garden is 20 feet. He plans on planting four different crops in equal sections. If a bean plant needs one square foot to grow, how many bean plants can Rory plant?

- A) 8      B) 31      C) 78      D) 314      E) none of these

**21.** Complete the following statement so that it is true: Rectangles are \_\_\_\_\_ squares.

- A) sometimes      B) never      C) always      D) larger      E) none of these

**22.** Theodor owns a shoe store. He polls his customers one Saturday and asks them how many pairs of shoes they own to create a new advertising campaign. The poll results are: {7, 6, 2, 8, 3, 9, 5, 4, 6, 10, 6}. Which statistical measure, mean, median, mode, or range, should Theodor use if he wants the largest number to include in his advertisement?

- A) mean      B) median      C) mode      D) range      E) none of these

**FOUNDATIONS TEST 2018 Answer Key**

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