

MONTANA COUNCIL OF TEACHERS OF MATHEMATICS  
2016 MATH CONTEST  
**FOUNDATIONS TEST**

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

- Evaluate  $x^2+3x-5$  when  $x = -1$   
A) -9      B) -7      C) -3      D) -1      E) None of these
- Solve  $\frac{2}{5}x = -40$   
A) -100      B) -16      C) 16      D) 100      E) None of these
- What quadrant does the point  $(-3, 2)$  lie in?  
A) Quadrant I      B) Quadrant II      C) Quadrant III  
D) Quadrant IV      E) None of these
- If you take the point  $(-2, -2)$  and move it 3 units to the right and 7 units up. What will be the coordinates of the new point?  
A)  $(3,7)$       B)  $(7,3)$       C)  $(5,1)$       D)  $(1,5)$       E) None of these

Use the following information for questions 5-7. On your monthly phone bill, you are charged a flat rate of \$50 per month plus \$0.50 per minute. Let  $x$  represent the number of minutes you use per month and let  $y$  represent the total amount you owe each month.

- Write the equation for the total amount you owe each month.  
A)  $y = 50x+50$       B)  $y = 0.50x-50$       C)  $y = 0.50x+50$   
D)  $y = 25x$       E) None of these
- Identify the y-intercept of the equation for the total amount you owe each month.  
A) -50      B) 0      C) 25      D) 50      E) None of these
- Identify the slope of the equation for the total amount you owe each month.  
A) 0.50      B) 50      C) 25      D) 0      E) None of these
- You bought 6 dozen donuts for school. You gave away  $\frac{1}{3}$  of the donuts to your math class. Next, you gave  $\frac{1}{4}$  of the remaining donuts to your science class. Finally, you split the remaining donuts between you and your best friend. How many donuts do you have for yourself?  
A) 3      B) 6      C) 9      D) 12      E) None of these
- Solve for  $x$  in the following equation:  $\frac{x}{4} = \frac{13}{52}$   
A) 1      B) 2      C) 3      D) 4      E) None of these
- Mark has \$330 in his bank account. For his birthday, his aunt gives him \$75. Then, he decides to buy an I-pod for \$199. On the way home from the Apple Store he gets hungry and buys a burger and soda for \$6. When he gets home, his mom tells him to put 30% of whatever he has left into his college fund. How much should Mark put into his college fund?  
A) \$15      B) \$35      C) \$60      D) \$140      E) None of these
- Which of the following expressions is equivalent to  $12x - 5(2x - 3) - 4$   
A)  $22x+11$       B)  $2x-19$       C)  $2x+11$       D)  $22x-19$       E) None of these

**FOUNDATIONS TEST 2016 page 2**

12. Janet is baking and she has 22 cups of flour. She is going to use  $3\frac{1}{4}$  cups for chocolate chip cookies and she uses  $5\frac{1}{3}$  cups for peanut butter cookies. Then she uses  $9\frac{5}{12}$  cups for cinnamon rolls. How many cups of flour does she have left?

- A) 3                      B)  $3\frac{7}{12}$                       C) 4                      D)  $4\frac{1}{4}$                       E) None of these

Use the following information to answer questions 13-15. The high school drama club is fundraising for a trip to New York! They buy roses to sell on Valentine's Day. They buy each rose for \$0.35 and plan to sell them for \$0.50 each.

13. If they buy 200 roses, how many do they need to sell in order to break even?

- A) 70                      B) 140                      C) 175  
D) They don't have enough roses                      E) None of these

14. If the students sell all 200 roses, how much profit do they make?

- A) \$100                      B) \$120                      C) \$70                      D) \$30                      E) None of these

15. The tickets for a show on Broadway costs \$240 for one student. How many times would the drama club have to run this fundraiser to buy a ticket for one student?

- A) 2                      B) 4                      C) 6                      D) 8                      E) None of these

16. In a class of 30, 12 are boys. If 6 more boys are admitted, what part of the class is then boys?

- A)  $\frac{1}{3}$                       B)  $\frac{1}{2}$                       C)  $\frac{2}{5}$                       D)  $\frac{3}{5}$                       E) None of these

17. If 5 oranges cost as much as 2 grapefruits, and 1 grapefruit costs as much as 3 apples, then 10 oranges costs as much as \_\_\_\_\_ apples.

- A) 6                      B) 9                      C) 10                      D) 12                      E) None of these

18. While playing outside, Chris spent 20 minutes playing soccer, 25 minutes swinging, 20 minutes playing on the trampoline, and 15 minutes playing frisbee. The total time Chris spent playing outside was

- A)  $1\frac{1}{5}$  hours                      B)  $1\frac{1}{4}$  hours                      C)  $1\frac{1}{3}$  hours  
D)  $1\frac{1}{2}$  hours                      E) None of these

19. What is the sum of  $3\frac{1}{5}$  and  $11\frac{2}{3}$  ?

- A)  $14\frac{13}{15}$                       B)  $14\frac{3}{8}$                       C)  $14\frac{11}{15}$                       D)  $14\frac{7}{8}$                       E) None of these

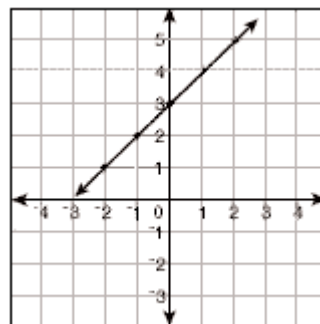
Use the following graph for questions 20 and 21

20. What is the y-intercept of the line?

- A) -3                      B) 0                      C) 1  
D) 3                      E) None of these

21. What is the slope of the line?

- A) -3                      B) 0                      C) 1  
D) 3                      E) None of these



## FOUNDATIONS TEST 2016 Answer Key

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