



MONTANA COUNCIL OF TEACHERS OF MATHEMATICS
2019 MATH CONTEST
FOUNDATIONS TEST

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

- Kaitlyn ran in the Missoula Marathon this past summer. She started running at 6:02 a.m. and finished the race 256 minutes later. What time did she finish the race?
A) 8:58 a.m. B) 10:18 a.m. C) 10:28 a.m. D) 11:30 a.m. E) none of these
- A scuba diver starts at sea level and dives 28 feet below the surface. The scuba diver is chased by a shark and first swims 15 feet closer to the surface, then descends 43 feet. How far away from the surface is the scuba diver?
A) 14 feet B) 30 feet C) 56 feet D) 80 feet E) none of these
- A rectangular garden has a perimeter of 80 feet and a width of is 10 feet. What is its area in feet?
A) 25 square feet B) 49 square feet C) 80 square feet D) 300 square feet E) none of these
- Solve $-5x + 17 = -8$
A) $x = -5$ B) $x = -3.4$ C) $x = 3.4$ D) $x = 5$ E) none of these
- Thirty percent of Major League Baseball players are born outside of the United States. There are 868 players. How many players are from the United States? (Round to the nearest person)
A) 260 B) 607 C) 608 D) 838 E) none of these
- What number is half way between 123,456,789 and 987,654,321 ?
A) 432,098,766 B) 555,555,555 C) 645,343,268 D) 698,234,252 E) none of these
- Morgan looks in her closet one morning and finds 5 shirts, 2 jeans, and 4 pairs of shoes to wear. How many different outfits does she have to wear?
A) 11 B) 12 C) 14 D) 40 E) none of these
- Savannah is baking a pie for a picnic. She has 12 cups of flour, and uses $2\frac{1}{2}$ cups for her recipe. Her neighbor comes over and borrows $\frac{1}{4}$ cup of flour. How much flour is left?
A) $9\frac{1}{4}$ cups B) $9\frac{1}{2}$ cups C) 10 cups D) $10\frac{1}{4}$ cups E) none of these
- Evaluate: $\frac{1}{2} \times \frac{2}{3} \times \frac{3}{7} \times \frac{5}{8} \times \frac{1}{9}$
A) $\frac{5}{504}$ B) $\frac{50}{504}$ C) $\frac{12}{29}$ D) $\frac{2}{3}$ E) none of these
- The circumference of a half court circle on a basketball court is about 37.7 ft. What is the diameter?
A) about 11 ft B) about 12 ft C) about 13 ft D) about 14 ft E) none of these
- Evaluate $4 - 3 \times 2 \div 2 + 1 - 6$
A) -6 B) -4 C) 4 D) 6 E) none of these

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12. Solve $\frac{8}{\frac{1}{3}} = \frac{x}{2}$.

- A) $x = 3$ B) $x = 16$ C) $x = 48$ D) $x = 84$ E) none of these

13. A standard deck of cards has 52 cards and four suits. What is the probability that you will draw an Ace?

- A) 1/52 B) 4/52 C) 3/13 D) 4/13 E) none of these

Use the information below for questions 14 - 16. You mowed lawns as a summer job this past summer to save for the new i-phone that's coming out. You earned \$15 per lawn and started with \$75 in your savings account. The equation that models your situation is $y = 15x + 75$.

14. What is the y-intercept of the line describing your situation?

- A) 15 B) 15x C) 75 D) 100 E) none of these

15. What is the slope of the line describing your situation?

- A) 15 B) 15x C) 75 D) 100 E) none of these

16. The new i-phone should cost \$999. If you use all the money in your savings to buy the phone, how many lawns do you need to mow to buy the phone?

- A) 61 B) 62 C) 15,060 D) 15,061 E) none of these

17. What quadrant does the point (10, 17) land in?

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

18. Of the data set: {1, 3, 5, 7, 8, 8, 10}, which number below is not the mean, median, mode, nor range.

- A) 6 B) 7 C) 8 D) 9 E) none of these

19. Which of the following numbers is irrational?

- A) -5 B) 0 C) 2π D) $\sqrt{49}$ E) none of these

20. You are walking with your snow cone on a warm summer day and the top falls off. What is the volume of ice mix that you have left in your cone if the largest part of the cone has a radius of 2 inches and a height of 5 inches? Round to the nearest whole number.

- A) 18 cubic inches B) 19 cubic inches C) 20 cubic inches D) 21 cubic inches E) none of these

21. The moon is 238,900 miles away from Earth. Write this number into scientific notation.

- A) 0.2389×10^{-6} B) 2.389×10^{-5} C) 0.2389×10^6 D) 2.389×10^5 E) none of these

22. Evaluate $y^2 + 2y - 17$ for $y = -3$.

- A) -32 B) -20 C) -14 D) -2 E) none of these

23. On a coordinate plane you move each of the three points (-2,4), (1,3), and (-2,-5) to (x+2, y-3). What are the resulting coordinates?

- A) (0,1),(3,0),(0,-8) B) (-4,1),(-1,0),(-4,-8) C) (-4,7),(-1,6),(-4,-2) D) (0,7),(3,6),(0,-2) E) none of these

FOUNDATIONS TEST 2019 Answer Key

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