



MONTANA COUNCIL OF TEACHERS OF MATHEMATICS

2013 MATH CONTEST

TEAM 7-8

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

1. Evaluate: $|-3| - |12 - 15|$
(A) 0 (B) -6 (C) 6 (D) 9
2. Solve for y: $\frac{24}{32} = \frac{3}{y}$
(A) 29 (B) 8 (C) 6 (D) 4
3. Simplify: $11x - 6y - (4x - 9y)$
(A) $-8xy$ (B) $7x + 3y$ (C) $7x - 15y$ (D) $10xy$
4. Two less than twice a number is 22. What is the number?
(A) -10 (B) 12 (C) 10 (D) 2
5. Jordan raises chickens and pigs. All together there are 30 heads and 78 feet. How many chickens does he have?
(A) 21 (B) 9 (C) 15 (D) 20
6. Solve: $\frac{30 - x}{x} = \frac{8}{7}$
(A) 30 (B) 210 (C) 14 (D) -7
7. Tony is planning a basketball tournament. He needs to know how many games will be played to reserve the gym. If there are 10 teams and each team plays all the other teams twice how many games will there be?
(A) 162 (B) 90 (C) 81 (D) 180
8. How many sides make-up a regular hexagon?
(A) 6 (B) 4 (C) 3 (D) 1
9. A right triangle has three integer side lengths. Two of the lengths are 6 and 10. What is the third side length?
(A) 12 (B) 16 (C) 8 (D) 6
10. The Wilma in Missoula has 8 stories, each the same height. It takes 12 seconds for the elevator to get from the first floor to the third floor. How many seconds does it take to get from the first floor to the eighth floor?
(A) 28 (B) 42 (C) 32 (D) 48
11. A customer orders 15 Wilcoxon's Fudgesicles. Fudgesicles are placed in packages of four, three or one. In how many different ways can you fill this order?
(A) 12 (B) 13 (C) 14 (D) 15
12. A total of 642 digits were used in numbering the pages of The Call of the Wild by Jack London. How many pages did the book contain?
(A) 250 (B) 642 (C) 321 (D) 326
13. If a pup is worth a pooch and a mutt, and a pup and a pooch are worth one bird dog, and two bird dogs are worth three mutts, how many pooches is a pup worth?
(A) 3 (B) 4 (C) 5 (D) 6

14. The degree measure of one of two complementary angles is 30 degrees less than twice the other. What are the degree measures of each of the angles?

- (A) 30° and 60° (B) 70° and 20° (C) 80° and 10° (D) 40° and 50°

15. If you take a sheet of paper and tear it in half. Then place the two pieces of paper on top of one another and tear them in half. This process yields 4 pieces of paper. Place them on top of one another and tear them in half again. Imagine continuing this process through twenty-two such tears. How many layers are now in the pile of paper?

- (A) 4,194,304 (B) 2,097,152 (C) $3.14 \cdot 10^{29}$ (D) 484

16. Which of the following measurements is NOT possible for a triangle?

- (A) 3, 4, 5 (B) 5, 8, 12 (C) 9, 5, 12 (D) 8, 17, 8

17. The measures of the angles of a triangle are $2x + 10$, $3x$, and $8x - 25$. The triangle is?

- (A) acute (B) right (C) obtuse (D) equilateral

18. In a 30-60-90 triangle, if the hypotenuse is 10, the length of the side opposite the 60 degree angle is:

- (A) 5 (B) $3\sqrt{5}$ (C) $5\sqrt{3}$ (D) $5\sqrt{2}$

19. Solve for x: $14x - 7 = 5x + 11$

- (A) 2 (B) $\frac{4}{9}$ (C) $\frac{4}{19}$ (D) -2

20. Simplify: $(a^2b^4)^3 - (a^3b^6)^2$

- (A) 0 (B) $a^5b^7 - a^5b^8$ (C) -b (D) 1

21. Find the slope between the points (-3, 4) and (2, -6)

- (A) $\frac{1}{2}$ (B) 2 (C) $-\frac{1}{2}$ (D) -2

22. Find the sum: $1 + 7 + 13 + \dots + 67 + 73$

- (A) 444 (B) 481 (C) 494 (D) 518

23. The length of a rectangular picture is three times its width. The picture is surrounded by a frame which is 4 cm wide. If the perimeter of the outside of the frame is 96 cm, how many centimetres long is the picture?

- (A) 24 (B) 16 (C) 8 (D) 48

24. The sides of a triangle are 5 cm, 6cm and 8 cm. Identify the triangle.

- (A) right (B) acute (C) obtuse (D) isosceles

25. A room measures 12 feet 4 inches by 9 feet 8 inches. What is the number of 4 inch by 4 inch square tiles that will completely cover the floor?

- (A) 4,292 (B) 1,073 (C) 76 (D) 304

TEAM TEST 7-8 2013 Answer Key

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