

MONTANA COUNCIL OF TEACHERS OF MATHEMATICS
2014 MATH CONTEST
7th GRADE TEST

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

1. A rectangular hay field has a length of 3000 ft. and width of 1200 ft. A rectangular wheat field is twice the length and one quarter the width of the hay field. What percent of the hayfield's area is the wheat field?
A) 0% B) 25% C) 50% D) 100% E) None of these
2. One of the factors of 24 is chosen at random. What is the probability that the chosen factor is **NOT** an even number?
A) 13% B) 25 % C) 75% D) 87% E) None of these
3. Hogs selling at market price at \$1.01 per pound are sold at the local auction. What is the total price for 18 hogs that weigh an average of 260 lbs?
A) \$1818.00 B) \$2626.00 C) \$4633.66 D) \$4726.80 E) None of these
4. The lengths of the first five songs on a popular CD are 5 min 46 sec, 4 min 23 sec, 4 min 15 sec, 3 min 58 sec, and 3 min 47 sec. There is a lapse of 4 seconds between songs. How long will it take from the time the first song starts and the last song finishes? (min:sec)
A) 20:89 B) 21:29 C) 22:25 D) 22:42 E) None of these
5. Which of the following numbers is **NOT** prime?
A) 47 B) 67 C) 97 D) 131 E) None of these
6. You travel to Denver for vacation and buy a hat at the Rockies game for \$34.99. If there is a 7.62% sales tax, what is your change from a \$50.00?
A) \$7.39 B) \$12.34 C) \$37.66 D) \$42.61 E) None of these
7. A 100 foot bungee chord with a $\frac{3}{4}$ in diameter will stretch to 150 feet with a 140 pound load. If stretched length is proportional to unstretched length under a constant load, how far would a 150 ft. bungee chord with a $\frac{3}{4}$ in. diameter stretch with a 140 pound load?
A) 225 ft. B) 250 ft. C) 275 ft. D) 300 ft. E) None of these
8. Solve: $x + 23 = -54$
A) -77 B) -31 C) 31 D) 77 E) None of these
9. A computer programmer makes \$34.32 per hour for 40 hours per week, 50 weeks per year. She is offered a new job with a \$72,500 annual salary. How much more would she earn per hour in the new job if she works the same number of hours per year?
A) \$1.93 B) \$3.63 C) \$36.25 D) \$38.60 E) None of these
10. The final test in English has 10 multiple-choice questions with 5 choices each. What is the probability that you can correctly guess all answers?
A) $\frac{1}{9,765,625}$ B) $\frac{1}{634,234}$ C) $\frac{1}{125,000}$ D) $\frac{1}{25}$ E) None of these
11. Four times a number decreased by negative twelve is ninety-two. What is the number?
A) -20 B) 11.5 C) 20 D) 26 E) None of these

12. If Tre'veon has 5 shirts and 3 pairs of pants. What is the probability that he will randomly select his favorite shirt and his favorite pants?

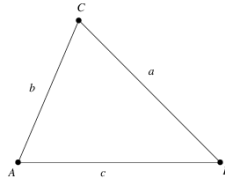
- A) $6\frac{2}{3}\%$ B) $12\frac{1}{2}\%$ C) $13\frac{1}{3}$ D) 20% E) None of these

13. Between what two integers is 732%?

- A) 0 and 1 B) 7 and 8 C) 73 and 74 D) 700 and 800 E) None of these

14. Compute the measure of $\angle C$ if $m\angle A = 68^\circ$ and $m\angle B = 32^\circ$?

- A) 42°
 B) 52°
 C) 73°
 D) 100°
 E) None of these



15. Two numbers are in the ratio of 7:8. If the larger number is 43.8, what is the smaller number?

- A) 35.4 B) 37.42 C) 38.325 D) 50.06 E) None of these

16. Complete the following statement so that it is true. Rectangles are _____ squares.

- A) Always B) Never
 C) Sometimes D) None of these

17. Breeanna needs to pour a concrete floor for a garage. The floor is to be 24 feet by 30 feet and 6 inches thick. If concrete costs \$150 per cubic yard and can only be bought in whole cubic yards, what is the cost of the floor?

- A) \$2100 B) 6000 C) 24000 D) 72000 E) None of these

For questions 18-20, use the information below.

One fabulous day, Mary Moneybags had \$80 in the bank, then every day after she added \$20 to her savings account. On that same fabulous day, Pamela Poorhouse had \$320 in the bank, then every day after she took out take out \$40 from her savings account to spend.

18. How many days after the fabulous day did they have the same amount of money?

- A) Day 4 B) Day 5 C) Day 6 D) Day 7 E) None of these

19. On the day in which the girls had the same amount of money, how much money did they have total?

- A) \$160 B) \$180 C) \$320 D) \$360 E) None of these

20. Four days after the fabulous day, Pamela Poorhouse decides to change her ways. Every day thereafter, instead of taking out \$40, she plans to add \$12 to her account. How many days will she need to save in order to have enough money to buy the new PS4 that costs \$399?

- A) 19 days B) 20 days C) 21 days D) 22 days E) None of these

21. The picture below shows a row of nested grocery carts. The carts are each 36 inches long. Each cart adds 20 inches to the length of the row. What would be the length, in feet, of 13 nested shopping carts?

- A) 22 feet
 B) 23 feet
 C) 24 feet
 D) $24\frac{2}{3}$ feet
 E) None of these



2014 SEVENTH GRADE ANSWER KEY

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