

## MIDDLE SCHOOL MATHEMATICS : TEST #207

- Find the 17th number in the following pattern : **69, 77, 85, 93, . . .**  
(A) 197            (B) 205            (C) 189            (D) 181            (E) None of these
- Find the decimal approximation for  $\frac{3}{16}$  to the nearest thousandth.  
(A) 0.187            (B) 0.1875            (C) 0.188            (D) 0.19            (E) None of these
- The sum of a number and 1 is doubled and the result is added to three times the difference of the number and 2. The result is 61. What is the number ?  
(A) - 53            (B) 13            (C) 24            (D) 12.4            (E) None of these
- How many prime numbers are less than 30 ?  
(A) 12            (B) 9            (C) 10            (D) 13            (E) None of these
- How many pounds of cookies selling for 75¢ a pound must be mixed with 30 pounds of cookies selling for 90¢ a pound to make a mixture that will sell for 84¢ a pound ?  
(A) 15            (B) 18            (C) 20            (D) 28            (E) None of these
- Linda is 23 years old and Patricia is 15 years old. How many years ago was Linda twice as old as Patricia ?  
(A) 8            (B) 3            (C) 7            (D) 9            (E) None of these
- What time is it in Los Angeles when it is 3:00 p.m. in San Antonio ?  
(A) 4:00 p.m.    (B) 12:00 a.m.    (C) 1:00 p.m.    (D) 2:00 p.m.    (E) None of these
- Mariana's scores on tests during this six weeks grading period were 85, 75, 80, 90, 80, 90, 85, 65, 85, 80, 75, 70, 100, 90, and 85. Find the mode of this set of scores.  
(A)  $81\frac{2}{3}$             (B) 80            (C) 85            (D) 90            (E) None of these
- One rectangle has a width of 5 m. and length of 7 m. Another rectangle has a width of 5 m. and length of 14 m. Determine the difference between the areas of the two rectangles.  
(A) 7 sq. meters            (B) 25 sq. meters            (C) 49 sq. meters  
(D) 35 sq. meters            (E) None of these

10. Which of the following decimal fractions is largest ?  
 (A) 2.0876      (B) 2.8076      (C) 2.8706      (D) 2.87006      (E) 2.876
11.  $\sqrt{144 + 25} = \underline{\quad? \quad}$ .  
 (A) 17      (B) 14      (C) 13      (D) 19      (E) None of these
12. If  $\frac{x^2 - 4}{x + 6}$  represents a real number, then  $x$  can't equal  $\underline{\quad? \quad}$ .  
 (A) 2      (B) -6      (C) -2      (D) 4      (E) None of these
13. The denominator of a fraction is twice as large as the numerator. If 4 is added to both the numerator and denominator, the value of the fraction is  $\frac{5}{8}$ . Find the numerator of the original fraction.  
 (A) 12      (B) 10      (C) 16      (D) 6      (E) None of these
14. Solve for  $x$  :  $4x^2 - 25 = 0$   
 (A)  $\{0, \frac{5}{2}\}$     (B)  $\{-\frac{5}{4}, \frac{5}{4}\}$     (C)  $\{-\frac{5}{2}\}$     (D)  $\{-\frac{5}{2}, \frac{5}{2}\}$     (E) None of these
15.  $6 + 12 + 18 + 24 + 30 + \dots + 60 + 66 = \underline{\quad? \quad}$ .  
 (A) 396      (B) 360      (C) 330      (D) 386      (E) None of these
16. If  $-|x - 4| + 3 = 18$ , then  $x = \underline{\quad? \quad}$ .  
 (A)  $\{-16, 25\}$     (B)  $\{-11, 19\}$     (C)  $\{-13, 21\}$     (D)  $\{-17, 15\}$     (E) None of these
17. If one inch is equal to 2.54 cm., how many centimeters are there in one yard ?  
 (A) 7.62      (B) 22.86      (C) 91.44      (D) 114.3      (E) None of these
18. Find the product of the number of pints in two gallons and the number of ounces in a pound.  
 (A) 512      (B) 384      (C) 256      (D) 128      (E) None of these

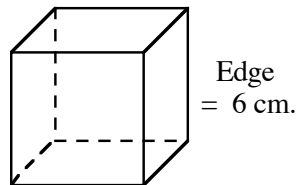
19. Find the volume of a spherical aquarium if the diameter is 2 feet in length.
- (A)  $\frac{8}{3} \pi$  cu. ft. (B)  $\frac{32}{3} \pi$  cu. ft. (C)  $\frac{4}{3} \pi$  cu. ft. (D)  $\frac{2}{3} \pi$  cu. ft. (E) None of these

20. Solve for  $x$  :  $9x + 8 - 2x = 4x + 38$
- (A) {7} (B) {11} (C) {10} (D) {8} (E) None of these

21. The base of a triangle is 15 inches and its area is 60 sq. in. Find the area of a similar triangle whose altitude is 6 in.
- (A) 33.75 sq. in. (B) 45 sq. in. (C) 25.25 sq. in.  
(D) 67.5 sq. in. (E) None of these

22. 18500 milligrams = ? grams.
- (A) 18.5 (B) 185 (C) 18500000 (D) 185000 (E) NOT

23. If the following cube were thrown up and allowed to fall flat on *one* face, what surface area is not covered by the ground ?



- (A)  $216 \text{ cm}^2$  (B)  $180 \text{ cm}^2$  (C)  $36 \text{ cm}^2$  (D)  $252 \text{ cm}^2$  (E) NOT
24. 36 is what percent of 120 ?
- (A) 10% (B) 20% (C) 25% (D) 30% (E) NOT
25. If 6 ounces of flour can produce 40 cookies, how many cookies can be produced with 3 pounds of flour ?
- (A) 81 (B) 160 (C) 90 (D) 120 (E) NOT

26. Choose the false sentence.
- (A)  $-3 < |3|$                       (B)  $-5.21 > -5.11$                       (C)  $0 \leq 1$
- (D)  $9 \geq |-9|$                       (E)  $\frac{1}{2} > \frac{1}{3}$
27. A simplified form of  $7y - [2 - 3(2y - 1)]$  is \_\_\_?\_\_.
- (A)  $13y + 1$     (B)  $13y - 5$     (C)  $13y + 5$     (D)  $y - 5$     (E) None of these
28. The sum of three odd numbers is \_\_\_?\_\_.
- (A) always odd  
 (B) sometimes odd  
 (C) always even  
 (D) always a prime number  
 (E) None of these
29. If  $2x = 11$ , the value of  $6x - 3$  is \_\_\_?\_\_.
- (A) 0              (B) 19              (C) 30              (D) 36              (E) None of these
30. Which of the following is the least ?
- (A) the number of which 12 is 30%  
 (B) the number of which 12 is 10%  
 (C) the number of which 12 is 60%  
 (D) the number of which 12 is 100%
31. If  $a > b$  and  $b < 0$ , then \_\_\_?\_\_.
- (A)  $a < 0$               (B)  $a > 0$               (C)  $a = 0$               (D) None of the above
32. If  $4y - 1$  is an odd integer, what is the next consecutive odd integer ?
- (A)  $4y$     (B)  $4y - 3$     (C)  $4y + 1$     (D)  $4y + 3$     (E) None of these
33. If  $-|a| = a$ , then \_\_\_?\_\_.
- (A)  $a = 0$     (B)  $a \leq 0$     (C)  $a \geq 0$     (D)  $a < 0$     (E) None of these
34. Two-thirds of a number added to itself is 20. What is the number ?
- (A) 12              (B)  $13\frac{1}{3}$               (C) 30              (D)  $33\frac{1}{3}$               (E) None of these

35. Which group of numbers is arranged from least to greatest ?
- (A)  $-8, -10, \frac{1}{3}, 0.6, 1$   
(B)  $1, 0.6, \frac{1}{3}, -8, -10$   
(C)  $-10, -8, 0.6, \frac{1}{3}, 1$   
(D)  $-10, -8, \frac{1}{3}, 0.6, 1$
36. If Jennifer can type a word every 1.5 seconds, how many words can she type in  $1\frac{1}{2}$  hours ?
- (A) 36      (B) 40      (C) 360      (D) 3600      (E) None of these
37. A box contains one red, one white, one blue, and one green marble. One marble is drawn at random. Of the remaining three marbles, a second one is drawn at random. What is the probability that the blue marble was not drawn ?
- (A)  $\frac{1}{2}$       (B)  $\frac{1}{4}$       (C)  $\frac{3}{4}$       (D)  $\frac{9}{16}$       (E) None of these
38. When a power is raised to a power, the exponents are \_\_\_?\_\_.
- (A) added    (B) multiplied    (C) subtracted    (D) divided    (E) None of these
39. The sum of two consecutive even integers is 32 more than their difference. Find the integers.
- (A) 16, 14    (B) 10, 12    (C) 16, 18    (D) 18, 20    (E) None of these
40. Money is borrowed at 11% simple interest. After one year \$832.50 pays off the loan. How much money was originally borrowed ?
- (A) \$91.58    (B) \$924.08    (C) \$821.50    (D) \$750.00    (E) None of these
41. Two airplanes leave Austin at the same time, one traveling east and one traveling west. One plane travels at 270 mph and the other at 250 mph. In how many hours will they be 1560 miles apart ?
- (A)  $3\frac{5}{7}$  hours    (B) 78 hours    (C) 3 hours    (D) 4 hours    (E) None of these
42. What is the prime factorization of 342 ?
- (A)  $2 \times 3 \times 57$   
(B)  $1 \times 2 \times 3 \times 57$   
(C)  $2 \times 3 \times 3 \times 19$   
(D)  $1 \times 2 \times 3 \times 3 \times 19$   
(E) None of these

43. To plot the point  $(-7, -4)$ , you start at the origin and go \_\_\_?\_\_.
- (A) down 4 and left 7  
 (B) down 7 and left 4  
 (C) left 7 and up 4  
 (D) left 4 and up 7  
 (E) None of these
44. The solution of  $8 - 2y \leq 6$  is \_\_\_?\_\_.
- (A)  $y \geq 1$     (B)  $y \leq -1$     (C)  $y \geq -1$     (D)  $y \leq 3$     (E) None of these
45. If  $f(x) = 3x^2 - 5$ , then  $f(-1) =$  \_\_\_?\_\_.
- (A) -2    (B) 4    (C) -8    (D) -12    (E) None of these
46. Which of the following equations is not linear ?
- (A)  $8x + 7 = 5y$     (B)  $3x = 7y$     (C)  $8xy = 3$   
 (D)  $2x = 0$     (E) None of these
47. The slope of the line containing the points  $(-2, 3)$  and  $(7, -3)$  is \_\_\_?\_\_.
- (A)  $-\frac{2}{3}$     (B) 0    (C)  $\frac{2}{3}$     (D)  $\frac{3}{2}$     (E) None of these
48. Determine the degree of the polynomial :  $9x^4 + 4x^3y^2 - 7x^2y^2 + 16xy^3$ .
- (A) 4    (B) 9    (C) 6    (D) 5    (E) None of these
49.  $(m - 9)(m + 9) =$  \_\_\_?\_\_.
- (A)  $m^2 - 81$     (B)  $m^2 - 18m - 81$     (C)  $m^2 + 81$   
 (D)  $m^2 + 18m - 81$     (E) None of these
50. The product of  $\sqrt{80}$  and  $\sqrt{18}$  in simplified form is \_\_\_?\_\_.
- (A)  $12\sqrt{10}$     (B) 120    (C)  $10\sqrt{12}$     (D)  $72\sqrt{5}$     (E) None of these