1. If the sum of a number and 4 is 2003, then the number is?

(a) 1998

(c) 1999

(b) 2000

(d) 2001

2. The question paper in an exam consists 80 problems. James has solved 68 of them. The percentage of the problems he has solved is?

(a) 80

(c) 87

(b) 85

(d) 89

3. An author of a math competition was looking through a tentative exam, when he realized that he could not use one of his proposed problems. Frustrated, he decided to take a nap instead, and slept from 10:47AM to 7:32PM. For how many minutes did he sleep?

(a) 524

(c) 526

(b) 525

(d) 528

4. If a rectangle *ABCD has the lengths*, $AB = 7$ and $AC = 25$, then its area is ?

(a) 168 (c) 169

(b) 170 (d) 171

5. If the diagonal of a square is 4 feet long, then the area of the square is

(a) 5 (c) 6

(b) 7 (d) 8

6. If two angles are supplementary and one of the angles is 9 times as large as the other, then the number of degrees in the measure of the larger angle?

(a) 161 (c) 162

(b) 163 (d) 164

7. $ABCD$ is a square with the length of 8 units each side. A second square $A_1B_1C_1D_1$ is formed by joining the midpoints of AB, BC, CD, and DA. A third square $A_2B_2C_2D_2$ is formed in the same way from $A_1B_1C_1D_1$, and a fourth square $A_3B_3C_3D_3$ from $A_2B_2C_2D_2$. Find the sum of the areas of these four squares.

(a) 192

(c) 194

(b) 120

(d) 180

8. If p + q = 13, q + r = 14, r + p = 15, then the value of r is

(a) 5

(c) 4

(b) 8

(d) 6

9. The number of three-digit perfect squares are,

(a) 48

(c) 22

(b) 11

(d) 33

10. City *X* is 210 miles from city *Y*. Car A starts from city *X* and drives towards *Y* at 40 mph. Car B starts From city *Y* and drives towards *X* at 50 mph. Cars A and B both start at noon, what time will they meet?

(a) 12:20 pm

(b) 3:20 pm

(c) 1:20 pm

(d) 2:20 pm

11. The cost of a slice of pizza is $1. The cost of a pie, which is composed of 8 slices, costs $6. John buys individual slices and pies so that he has 78 total slices. If he has to pay $62, how many slices does he buy individually?

(a) 12

(b) 11

(c) 13

(d) 14

12. If *A* + *B* = square root of(8) and *A* - *B* = square root of (5), what is *A* x *B*?

(a) 1/8

(b) 5/9

(c) 3/4

(d) 3/6

13. ABC is a isosceles triangle and $AB = AC$ & angle$(BAC) = 140$. If point D lies on BC such that $AD = BD$, *then the* angle(DAC) in degrees is

(a) 360

(c) 170

(b) 120

(d) 220

14. The last two digits of of 5^{2003} is

(a) 35

(c) 55

(b) 45

(d) 25

15. A number is strictly getting decreased such that each digit is strictly less than the digit to its left. For example, 531 and 962 are strictly decreasing, whereas 562 and 322 are not. How many integers between 100 and 600 are strictly decreasing?

(a) 20

(c) 50

(b) 70

(d) 80

16. Which of the following are true, given that there may be more than one true statement:

I: the square of an integer is a whole number
II: *if a not equal to b and* b *not equal to c*, then *a not equal to c*
III: every integer has a rational inverse in multiplication
IV: the square root of a positive integer is real

(a) I & II

(c) I & IV

(b) III & II

(d) None of these

17. A number *p* yields a remainder of 3 when divided by 5, a remainder of 5 when divided by 7, and a remainder of 11 when divided by 13. If *p* is less than 1000, what is the maximum value of *p*?

(a) 905

(c) 902

(b) 904

(d) 908

18. In the *magic square given below*, numbers are to be placed in the empty boxes so that the sums of the numbers in each row, column, and diagonal are equal to the same value. What is the value of x?

19	a	b
	c	26
	x	d

(a) 12

(b) 14

(c) 13

(d) 15

19. There is a silly number *ababab* is formed by repeating a two-digit number *ab* exactly three times. For example, 252525 is a *silly* number. What is the greatest common divisor of all *silly* numbers?

(a) 10102

(b) 10103

(c) 10101

(d) 10100

20. Ten lottery tickets are in a hat in which four of them are winning tickets. First, Jack reaches in and takes a ticket. Then, Michael reaches in and takes a ticket from the remaining nine. What is the probability that Jack takes a winning ticket?

(a) 3/5

(b) 2/5

(c) 6/5

(d) 1/5

21. The unit digit of $13^{17} + 17^{13}$ is

(a) 1

(b) 2

(c) 9

(d) 0

22. If the diameter of a circle is 376216 inches, using the approximation $\pi = 3.14$, compute the ratio of the circle's area, in square inches, to its circumference, in inches.

(a) 94054:1

(b) 94054:3

(c) 94054:2

(d) 94054:4

23. If 1/7 is written in decimal form, then the 100th digit after the decimal point is

(a) 7
(c) 6
(b) 8
(d) none of these

24. *ABCD is* a rectangle with *AB* = 20 and *BC* = 6. If *P* be the point such that *P* is 12 units away from *DA* and 5 units away from *CD*, then the area of quadrilateral *APCD is*

(a) 22.5
(c) 13.5
(b) 33.5
(d) 86.0

25. If *a*, *b*, and *c* are nonzero numbers satisfying $3a = 4b$ and $5b = 6c$, what is $c/(a+b)$?

(a) 5/14
(c) 6/14
(b) 7/14
(d) 8/14

26. The radii of two spheres are of 2 and 6, then the ratio of the volume of the larger sphere to the volume of the smaller sphere is

(a) 27

(c) 216

(b) 8

(d) 6

27. If P be the product of the first nine multiples of 19 (i.e. P = 19x38x57…….152x171). What is the last digit of P?

(a) 2

(c) 1

(b) 0

(d) 3

28. The ages of Mr. and Mrs. Fibonacci are both two-digit numbers. If Mr. Fibonacci's age can be formed by reversing the digits of Mrs. Fibonacci's age, find the smallest possible positive difference between their ages.

(a) 2

(c) 1

(b) 5

(d) 9

29. What is the value of 1 + 3 + 5 +…… + 195 + 197 + 199?

(a) 10000 (c) 5000

(b) 15000 (d) 16000

30. The number of positive divisors of 120 are divisible by 4 are

(a) 8 (c) 4

(b) 5 (d) 6

31. A pair of positive integers p and q is such that their greatest common divisor is 5 and their least common multiple is 55. Find the smallest possible value of p + q.

(a) 40 (c) 45

(b) 36 (d) 60

32. Given that $5^3 + 5^3 + 5^3 + 5^3 + 5^3 = 5^J$ and $3^2 + 3^2 + 3^2 = 3^N$, what is the value of J^N?

(a) 40

(b) 64

(c) 30

(d) 50

33. The difference between the two positive whole numbers is 3. The sum of their squares is 117. Find the larger of the two numbers.

(a) 13

(b) 4

(c) 32

(d) 9

34. Given that absolute value of $(3-a) = 2$, compute the sum of all possible values of a

(a) 8

(b) 9

(c) 5

(d) 6

35. The surface area and the volume of a cube are numerically equal. Find the cube's volume.

(a) 216

(b) 226

(c) 236

(d) 326

36. How many positive whole numbers less than 100 are divisible by 3, but not by 2?

(a) 91

(b) 46

(c) 88

(d) 17

37. How many multiples of 17 are there between 23 and 227?

(a) 28

(b) 30

(c) 12

(d) 24

38. Compute the largest divisor of 2800 that is a perfect square.

(a) 200
(c) 400
(b) 300
(d) 500

39. Find the product of the integers from -5 to 5, inclusive.

(a) 3
(c) 1
(b) 2
(d) 0

40. A particular number is doubled and the result is increased by 11, the final number is 23. What is the original number?

(a) 4
(c) 3
(b) 6
(d) 1

41. Find the value of 664.02 ÷9.3.

(a) 71.5

(c) 71.3

(b) 71.4

(d) 71.2

42. Let *A* be the sum of seven 7's. Let *B* be the sum of seven *A*'s. What is *B*?

(a) 343

(c) 341

(b) 342

(d) 340

43. In triangle *ABC*, *BC* = 4 and *CA* = 6. If the perimeter of the triangle is 4 times the length of side *BC*, what is the length of *AB*?

(a) 7

(c) 6

(b) 4

(d) 3

44. David is 7 feet 5 inches tall. His basketball hoop is 10 feet from the ground. Given that there are 12 inches in a foot, how many inches must he jump to touch the hoop with his head?

(a) 29

(c) 31

(b) 30

(d) 32

45. Cameroon has 3 triangles and 6 pentagons. If R be the total number of sides of the shapes and S be the number of shapes he has, then $S + N$ is

(a) 43

(c) 45

(b) 48

(d) None of these

46. Arnold would like to get at least 90% of math competition problems correct. However, he has only answered 20 out of 50 correctly so far this year. What is the least number of problems he has to solve in the future in order to reach 90%?

(a) 210

(b) 300

(c) 250

(d) 310

47. Boucher only watches 4 channels during a certain period. He spends one-third of the period watching the History Channel's documentary about him. He spends one-fourth of the time watching Jeopardy!, where he is the answer to the final jeopardy question. Then he watches ESPN for MathCounts for another one-fourth of the time. He spends the rest of the time, 7 hours, watching the *Answer to Everything* channel. How long, in hours, is the period in which Boucher does all of these things?

(a) 42

(b) 24

(c) 36

(d) 48

48. A foot ball team is struggling, being outscored 20 to 12 over their first eight games. Given that their opponents never scored more than three goals in one game, what is the maximum number of wins the team can have so far?

(a) 6

(b) 5

(c) 3

(d) 4

49. Let the number of rabbits multiply by 5 in population every hour. Let the number of ants multiply by 3 in population every hour. Rabbits initially have a population of 81 and ants have an initial population of 625, after how many hours will the rabbit population equal the ant population?

(a) 1

(b) 3

(c) 5

(d) 4

50. There are 4 girls and 3 boys (all distinguishable) wish to be seated in a 7-seat row at the movie theater. What is the probability that the two people at each end of the row were both boys or both girls?

(a) 3/4

(c) 3/7

(b) 48/24

(d) 46/23

Answers					
1. c	2. b	3. b	4. a	5. d	6. c
7. b	8. b	9. c	10. d	11. d	12. c
13. b	14. d	15. a	16. c	17. d	18. a
19. c	20. b	21. d	22. a	23. b	24. d
25. a	26. a	27. b	28. d	29. a	30. a
31. d	32. b	33. d	34. d	35. a	36. d
37. c	38. c	39. d	40. b	41. b	42. a
43. c	44. c	45. b	46. c	47. a	48. d
49. d	50. c				