1. A palindrome is a number that reads the same way forward or backward. For example, 987656789, 66, 9 are palindromes, but 1212 and 2010 are not. How many odd five-digit numbers that start with 5 are palindromes?

(a) 190

(c) 90

(b) 100

(d) 10

2. If the area of a square is numerically 9 times more than the square's perimeter, then the side length of the square is

(a) 46

(c) 36

(b) 56

(d) 86

3. Find the number of zeroes at the end of 2010!

(a) 501

(c) 555

(b) 601

(d) 801

4. Find the radius of the circle passing through all three vertices of an equilateral triangle of side length 4.

(a) 4√3/5

(c) 4√3/7

(b) 4√3/3

(d) 4√3/9

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5. How many digits are there in 32000011^2?

(a) 17

(c) 15

(b) 19

(d) 16

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6. When 2.481481……. is expressed as a fraction of integers, it yields a/b , where a and b are relatively prime. Find a + b.

(a) 383

(c) 183

(b) 283

(d) 483

7. Michael has four children with integer ages. If the product of their ages is 7, find the sum of their ages.

(a) 9   (c) 10

(b) 5   (d) 6

8. Let us consider ten boxes in which each filled with ten Poke balls. James finds that among them is one box containing defective Poke balls which weigh one gram less than normal Poke balls. James has a digital scale which can measure the mass of the Poke balls, either one or many at a time. Find the least number of weighing with which James can find out the defective box.

(a) 4   (c) 2

(b) 3   (d) 1

9. What is the remainder when 2^{27} divided by 9

(a) 7   (c) 6

(b) 2   (d) 8

10. How many vertices does a regular octahedron have?

(a) 6   (c) 10

(b) 8   (d) 9

11. Find the value of $2x-3y$, if $4x^2-9y^2=15$ and $2x+3y=3$.

(a) 12   (c) 5

(b) 11   (d) 8

12. The weather forecast says that there is a 3/5 chance of rain on any given day. What is the probability it will rain at least once over the next four days?

(a) 525/509   (c) 625/609

(b) 509/525   (d) 609/625

13. Find the value of $\log_3 27$.

(a) 0

(c) 1

(b) 3

(d) 2

14. What is the sum of the first 20 terms of the arithmetic sequence 5, 10, 15, …….

(a) 3050

(c) 1050

(b) 2050

(d) 4050

15. The number of positive integers which divide 23 are

(a) 2

(c) 8

(b) 4

(d) 1

16. Find the value of (-2009)x(-2008)x,,,,,,,,,2008x2009 .

(a) -2008

(c) 2009

(b) -2009

(d) 0

17. James, Dayne, and Kevin each have x buttons. james gives 12 buttons to Dayne who now has 6 less than twice the number of buttons James has. Kevin then gives y buttons to Dayne who now has 20 buttons more than Kevin has. Kevin then gives y more buttons to James, who now has the same number of buttons as Kevin. How many buttons does David have now?

(a) 52

(c) 58

(b) 42

(d) 82

18. The length of the line which is from centre to circumference of the circle is 7. What is the perimeter of the circle?

(a) 22

(c) 11

(b) 44

(d) 88

19. While trying to calculate the sum 21 + 22 + 23 + 24 + 25 + 26 + 27 + 28 + 29, Cameroon forgets to take into account one plus sign, getting 2601 as his result. If he forgot the plus sign between 2a and 2b (where a and b are the ones digit of the two digit number), find a + b where a and b are consecutive integers between 1 and 9 inclusive.

(a) 9

(c) 11

(b) 13

(d) 12

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20. A polynomial of fourth degree passes through the points (0; 0), (1; 0), (2; 0), (3; 0) and (4,1) What is the value of the polynomial at x = 5?
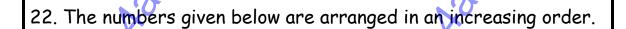
(a) 3

(c) 5

(b) 7

(d) 1

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21. Let $2n^2-16$ be a prime. Find all integer values for "n".

(a) 1, -1

(c) 2, -2

(b) 2, -3

(d) 3, -3

22. The numbers given below are arranged in an increasing order.

$$2^{\frac{1}{222}}, 3^{\frac{1}{333}}, 4^{\frac{1}{444}}, \text{ and } 5^{\frac{1}{555}}$$

The second and third number on this list are x and y. Find $\log_x y$.

(a) 4

(c) 2

(b) 1

(d) 3

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23. Find the smallest integer such that 16,000 can be multiplied by to get a number with 10 zeros at the end?

(a) 625000

(c) 425000

(b) 825000

(d) none of these

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24. x,y and z are real numbers satisfying the equation below
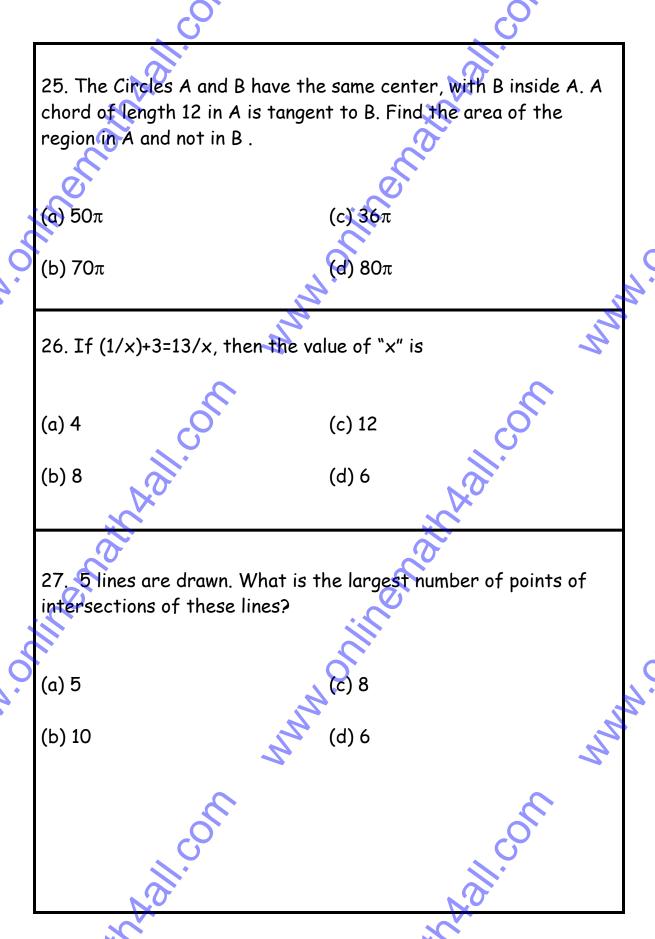
$$\frac{|x-y|}{2}+\sqrt{|2y+z|}+ z^2 - z+\frac{1}{4}= 0$$

Then, find the value of $(y+z)^x$

(a) √2

(c) 2

(b) 0

(d) 4

25. The Circles A and B have the same center, with B inside A. A chord of length 12 in A is tangent to B. Find the area of the region in A and not in B .

(a) 50π   (c) 36π

(b) 70π   (d) 80π

26. If (1/x)+3=13/x, then the value of "x" is

(a) 4   (c) 12

(b) 8   (d) 6

27. 5 lines are drawn. What is the largest number of points of intersections of these lines?

(a) 5   (c) 8

(b) 10   (d) 6

28. The price of a company's stock starts at $600 dollars per share. If the stock falls by 10% and than rises by 10% of the new price, what is the new stock price in dollars?

(a) $524

(c) $594

(b) $559

(d) $598

29. Kemp wants to write all the numbers from 1 to 1000. On day 0, he starts counting from "0", and then writes 120 digits a day (so, on the first day, he'd count 65 numbers -10 one-digit numbers and 55 two-digit numbers, for a total of 120 digits). On what day does he write one thousand?

(a) 23rd day

(c) 26th day

(b) 24th day

(d) 25th day

30. 4 yellow beads and 6 green ones are randomly arranged in a line. Given that the first and last bead are the same color, what is the probability that the first bead is green?

(a) 8/7

(c) 4/7

(b) 5/7

(d) 6/7

31. Evaluate:

$$\frac{i^{2010}}{i^{2008}} + \frac{i^{2009}}{i^{2008}}, \text{ where } i = \sqrt{-1}.$$

(a) -1+i or -1-i

(c) 1+i or 1-i

(b) 1

(d) i

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32. Find the number of solutions to $7x + y = 2010$, where x and y are positive integers.
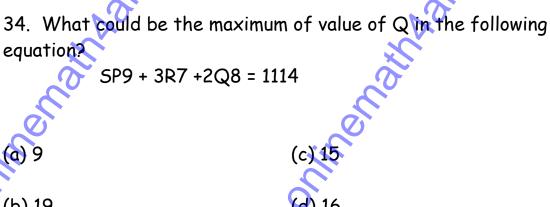
(a) 240

(c) 287

(b) 264

(d) 250

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33. The time is now 2:28 PM. In an analog clock, the hour hand and the minute hand will make an angle of 180 degrees in x minutes, where x is positive and as small as possible. Find x

(a) 171/11

(c) 170/11

(b) 169/11

(d) 172/11

34. What could be the maximum of value of Q in the following equation?

SP9 + 3R7 +2Q8 = 1114

(a) 9

(c) 15

(b) 19

(d) 16

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35. Simplify: 5793405 x 9999

(a) 624673750

(c) 524673750

(b) 724673750

(d) 824673750

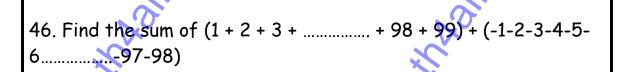36. Find the H.C.F of 513, 1134, and 1215.

(a) 21

(c) 28

(b) 24

(d) 27

37. In an election between two candidates, 75% of voters cast their votes, out of which 2% of the votes were declared invalid. A candidate got 9261 votes which were 75% of the total valid votes. Find the total number of votes enrolled in that election.

(a) 16822

(c) 16833

(b) 16800

(d) 16811

38. x % 25 = 2.125. Find the value of "x".

(a) 8.5

(c) 4.5

(b) 1.5

(d) 5.5

39. A man bought horse and a carriage for $ 3000. He sold the horse at a gain of 20% and the carriage at a loss of 10%, there by gaining 2% on the whole. Find the cost of the horse.

(a) $1316

(c) $1200

(b) $1226

(d) $1336

40. A,B and C started a business by investing $120000, $135000 and $150000 respectively. Find the share of A, out of the annual profit of $56700.

(a) $41000

(c) $31000

(b) $60100

(d) $16800

41. If 15 toys cost $234, then the cost of 35 toys is

(a) $750

(c) $360

(b) $546

(d) $420

42. Find the probability for getting 50 heads, when 50 fair coin are tossed.

(a) $1/2^{100}$

(c) $1/2^{50}$

(b) $2/4^{50}$

(d) $2/2^{25}$

43. Worker A takes 8 hours to do a job. Worker B takes 10 hours to do the same job. How long should it take both A and B, working together but independently, to do the same job?

(a) 40/9 days

(c) 30/8 days

(b) 50/9 days

(d) 25/11 days

44. A farmer wants to fence his garden which is in the shape of the rectangle. One of the longest sides of the garden is covered by the wall of his house. If the width is 5 meter and length is 8 meter, what is the length of fencing does he have to do to cover the garden?

(a) 21 meter

(c) 26 meter

(b) 16 meter

(d) 18 meter

45. A train 100 meter long is running at the speed of 30 km/hr. Find the time taken by the train to pass a man standing near the railway line.

(a) 43 seconds

(c) 12 seconds

(b) 48 seconds

(d) 15 seconds

46. Find the sum of (1 + 2 + 3 + …………… + 98 + 99) + (-1-2-3-4-5-6……………-97-98)

(a) 99

(c) 100

(b) 300

(d) 310

47. Find the simple interest on $ 68000 at the rate of (50/3)% per annum for nine months.
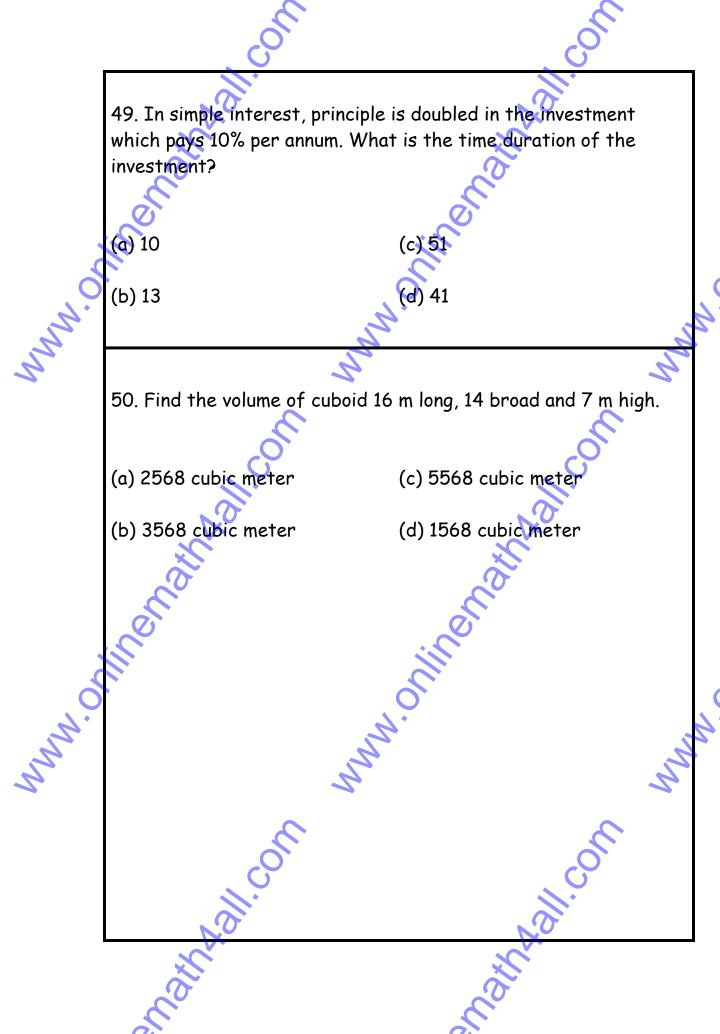
(a) $7800

(c) $3600

(b) $2400

(d) $8500

48. Find compound interest on $ 7500 at the arte of 4% per annum for two years, compounded annually.

(a) $660

(c) $330

(b) $612

(d) $240

49. In simple interest, principle is doubled in the investment which pays 10% per annum. What is the time duration of the investment?

(a) 10   (c) 51

(b) 13   (d) 41

50. Find the volume of cuboid 16 m long, 14 broad and 7 m high.

(a) 2568 cubic meter   (c) 5568 cubic meter

(b) 3568 cubic meter   (d) 1568 cubic meter

Answers

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