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| --- | --- | --- |
|  | Name 1 |  |
| **Name 2** |  |
| **Name 3** |  |
| **School Name** |  |
| **Marks** |  |
| **Tie Score** |  |

### Quick Facts

* **25** Questions
* No Negative Marking
* Duration: 1 hour.
* **In built Tie-Breakers**

#### IYMC JUNIOR PRELIMS

1. Two infinite series are always:

1. Disjoint Sets B) Overlapping Sets C) Equivalent Sets D) Equal Sets.

2. Find the product of numbers: 101/5, 102/5, 103/5…., 1019/5

1. 380 B) 10380 C) 1038/5 D)1038

3. Which term of the arithmetic sequence 1, 6, 11, ….. is 96?

1. 20 B) 22 C) 19 D) 21

4**.** Determine the correct area from the triangle formed by the co-ordinate axes and the line

8x + 6y – 48 = 0

1. a = 26 B) a = 25 C) a = 22 D) a = 24

5.A man passed one sixth of his life in childhood, one twelfth in youth, and one seventh more as a bachelor. Five years after his marriage, a son was born who died four years before his father at half his final age. How old was the man when he died?

1. 70 B) 68 C) 84 D) 80

6.Sue was standing in a queue at a video store. She noticed that there were three more people ahead of her than behind her. There were 16 people in the queue in total. What was Sue’s position in the queue?

1. 6th B) 7th C) 9th D) 10th

7.

.

8cm

4cm



What is the value of ‘x’ in the figure shown above?

1. 30 B) 40 C) 50 D) 60

8. Lisa is 30 years old. In 10 years time, she will be 20 years younger than William. How old is William now?

A) 40 B) 45 C)50 D) 60

9. How many whole numbers from 10 to 99 have sum of their digits equal to 9?

A) 9 B) 10 C) 18 D) 20

10. What is the median of numbers 0, 2, 4, 6, 6, 7?

A) 4 B) 5 C) 6 D) 7

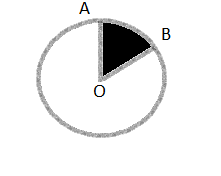
11.



In the figure shown above, what is the value of x?

A) 40 B) 50 C) 65 D) 80

12.



In the figure above, length of minor arc AB is π/2 and the area of the shaded region is 1/6th of the area of the entire circle. What is the radius of a circle that is ½ of the area of the above circle?

1. 9 B) 9/8 C) 3/4 D) 9/8



13. A circle with centre ‘A’ has its centre at (6, -2) and a radius of 4. Which of the following is equation of a line tangent to the circle with center A?

A) y = 3x+2 B) y = 2x+1 C) y = -2 D) y = -6

14. If nth term of a sequence is given by expression 2\*4n-1, what is the units digit of 131st term in sequence?

A) 0 B) 2 C) 3 D) 6

15. If 0 < a and b < 0, which of the following must be true?

A) a+b = 0 B) a/b < 0 C) a+b < 0 D) a+b > 0

16. Radius and height of a right circular cylinder are decreased by 20 and 50 percent respectively. By what percent is the volume of the cylinder decreased?

A) 70% B) 68% C) 60% D) 40

17. In the sequence 12, 24 , 72, 2664,… where 12 is the first term, which of the following is an expression for nth term?

A) 12\*n B) 12n C) 4(n+1) – n D) 4n + 8

18. If w, x, y and z are consecutive positive integer multiples of 6 such that z > y > x > w, then x + z is how much greater than w + y?

A) 0 B) 3 C) 6 D) 12

19. Ebb and his son Kenny, are selling cookies. They have 20q cookies on sale for 2p dollars each. If they received ‘r’ dollars from cookie sales, how many cookies were NOT sold?

A) 20q – (r/2p) B) 2rp V) q – 2rp D) 20q – (2p/r)

20. The graphs of y = 3x + 2 and y = 3x – 4 in the xy – plane can intersect in at most how many points?

A) None B) One C) Two C) Three

21**.** If q = 1/s and qs ≠ 0, what is the result of (1 + q)/(1 + s)?

A) 0 B) –q C) q D) s

22**.** 246810121416182022….

The number above is formed by writing down, in increasing order, the consecutive even integers from 2 to 98, inclusive. What is the fortieth digit in the number?

1. 0 B) 2 C) 3 D) 4

23**.** Line q is given by the equation y = -x + 8, and line r is given by the equation 4y = 3x – 24. If line r intersects the Y-axis at point A, line q intersects the Y-axis at point B, and both lines intersect the X-axis at point C, what is the area of triangle ABC?

A) 14 B) 24 C) 48 D) 56

24**.** A certain recipe uses b tablespoons of butter and f cups of flour to make a batch of brownies. If Mario wants to make a larger batch using b + 2 tablespoons of butter, how many cups of flour must he use to maintain the proportion in the original recipe?

A) b/f(b + 2) B) f/b C) b + 2/f D) f(b + 2)/b

25. -7, -5, -3, -1, 0, 1, 3, 5, 7

How many distinct products can be obtained by multiplying pairs of numbers from the list above?

1. 9 B) 17 C) 19 D) 21

**\*\*\*\*\*\*\*\*\*All The Best For The Finals\*\*\*\*\*\*\*\*\*\*\*\*\***