



MATHS

BOOKS - VGS BRILLIANT MATHS (TELUGU ENGLISH)

SUMMATIVE ASSESSMENT

Summative Assessment

1. Ramu says, "If $\log_{10} x = 0$, value of $x = 0$ ".

Do you agree with him ? Give reason.



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2. Determine 'x' so that 2 is the slope of the line passing through A (-2, 4) and B(x, -2).



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3. -3, 0 and 2 are the zeroes of the polynomial

$p(x) = x^3 + (a - 1)x^2 + bx + c$, find a and c.



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4. Find the discriminant of the quadratic equation $3x^2 - 5x + 2 = 0$ and hence write the nature of its roots.



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5. Find the 11^{th} term of the A.P. : 15, 12, 9,



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6. If $A = \{1, 2, 3\}$, $B = \{3, 4, 5\}$, then find $A - B$ and $B - A$.



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7. Write any two linear polynomials having one term and three terms.



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8. If $A = \{x : x \text{ is a factor of } 12\}$ and $B = \{x : x \text{ is a factor of } 6\}$, then find $A \cup B$ and $A \cap B$.



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9. Find the roots of quadratic equation $x^2 + 4x + 3 = 0$ by "Completing Square method".



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10. For what value of 'm' in the following, $mx + 4y = 10$ and $9x + 12y = 30$ system of equations will have no solution ? Why ?



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11. Which term of the G.P. : $\sqrt{2}, 2, 2\sqrt{2}, 4, \dots$ is 32 ?



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12. If $x^2 + y^2 = 10xy$, prove that

$$2\log(x + y) = \log x + \log y + 2\log 2 + \log 3.$$



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13. Shashanka said that $(x + 1)^2 = 2(x - 3)$

is a quadratic equation. Do you agree ?



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14. Use Euclid's division lemma to show that the square of any positive integer is of the form $5n$ or $5n + 1$ or $5n + 4$, where n is a whole number.



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15. Show that $\sqrt{5} - \sqrt{3}$ is an irrational number.



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16. Draw a graph for the polynomial $p(x) = x^2 + 3x - 4$ and find its zeros from the graph.



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17. Draw the graph of $x + y = 11$ and $x - y = 5$. Find the solution of the pair of linear equations.



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18. A train travels 360 km at a uniform speed. If the speed had been 5 km/h more, it would have taken 1 hour less for the same journey. Find the speed of the train.



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19. Find the sum of all the integers between 1 to 50 which are not divisible by 3.



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20. Find the area of a rhombus ABCD, whose vertices taken in order, are A (-1, 1), B(1, -2), C(3, 1) and D(1, 4).



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21. If $A = \{x : x \text{ is a prime less than } 20\}$ and $B = \{x : x \text{ is a whole number less than } 10\}$, then verify $n(A \cup B) = n(A) + n(B) - n(A \cap B)$.



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43. if a, b, c are in A.P. then $b =$

A. $\frac{a + c}{2}$

B. $a + c$

C. \sqrt{ac}

D. ac

Answer:



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44. If the number of subsets of a given set is 32, then the number of elements in the set will be

A. 2

B. 4

C. 5

D. 3

Answer:



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45. The distance of $(3, 4)$ from origin is

A. 3

B. 4

C. 5

D. 7

Answer:



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46. The sum of the roots of $6x^2 = 1$ is

A. 0

B. $\frac{1}{6}$

C. $-\frac{1}{6}$

D. 6

Answer:



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47. If the polynomial $p(x) = x^4 - 2x^3 + x^2 - 1$ is divided by $(x + 1)$, then the degree of quotient polynomial.

A. 1

B. 3

C. 4

D. 2

Answer:



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48. If the sum of a number and its reciprocal is

$\frac{17}{4}$, then that number is.....

A. 3

B. 4

C. 5

D. 17

Answer:



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49. If $\log_{10} 2 = 0.3010$, then $\log_{10} 32$ is

A. 5.301

B. 2.301

C. 1.505

D. 0.301

Answer:



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50. The point $(-2, -2)$ is in the quadrant.

A. Q_1

B. Q_2

C. Q_3

D. Q_4

Answer:



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51. The sum of the first 20 even natural numbers is

A. 5050

B. 55

C. 505

D. 420

Answer:



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52. The roots of a quadratic equation

$ax^2 - bx + c = 0$, $a \neq 0$ are

A. $\frac{-b + \sqrt{b^2 - 4ac}}{2a}$, $\frac{b + \sqrt{b^2 + 4ac}}{2a}$

B. $\frac{-b + \sqrt{b^2 - 4ac}}{2a}$, $\frac{-b - \sqrt{b^2 + 4ac}}{2a}$

C. $\frac{b + \sqrt{b^2 - 4ac}}{2a}, \frac{b - \sqrt{b^2 - 4ac}}{2a}$

D. $\frac{-b + \sqrt{b^2 - 4ac}}{2a}, \frac{-b - \sqrt{b^2 - 4ac}}{2a}$

Answer:



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53. The probability is sure event is

A. 0

B. $\frac{1}{2}$

C. 1

D. Undefined

Answer:



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54. $\sec \theta =$

A. $\sqrt{1 - \cos^2 \theta}$

B. $\sqrt{1 - \tan^2 \theta}$

C. $\tan^2 \theta - 1$

D. $\sqrt{\frac{1}{1 - \sin^2 \theta}}$

Answer:



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55. Side of a cube and diameter of sphere are equal, then the ratio of their volume will be

A. $4 : \pi$

B. $6 : \pi$

C. $3 : \pi$

D. $2 : \pi$

Answer:



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56. A die is thrown once. Find the probability of getting a prime number,

A. $\frac{1}{3}$

B. $\frac{1}{2}$

C. $\frac{2}{3}$

D. $\frac{1}{6}$

Answer:



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57. A metallic sphere of radius 'r' is melted and recast into the shape of solid cylinder of radius 'r', the height of the cylinder is

A. $3r$

B. $\frac{3}{4}r$

C. $\frac{4}{3}r$

D. $4r$

Answer:



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58. Mean of certain number of observations is \bar{x} . If each observation is divided by m ($m \neq 0$) and then increased by n , then the mean of new observation is

A. $\frac{\bar{x}}{n} + m$

B. $\bar{x} + \frac{n}{m}$

C. $\bar{x} + \frac{m}{n}$

D. $\frac{\bar{x}}{m} + n$

Answer:



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59. A ladder 15m long just reaches the top of vertical wall. If the ladder makes an angle of 60° with the wall. Then the height of the wall is

A. $15\sqrt{3}m$

B. $\frac{15\sqrt{3}}{2}m$

C. 7.5 m

D. 15 m

Answer:



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60. If $\sec \theta + \tan \theta = x$, then $\sec \theta =$

A. $\frac{x^2 + 1}{x}$

B. $\frac{x^2 + 1}{2x}$

C. $\frac{x^2 - 1}{2x}$

D. $\frac{x^2 - 1}{x}$

Answer:



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61. At point 'P' on a circle, PQ is a tangent and 'O' is the centre of the circle. If $\triangle OPQ$ is an isosceles triangle, then $\angle OQP$ is equal to

A. 90°

B. 30°

C. 45°

D. 60°

Answer:



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