MATHS WORKSHEET- 1 CLASS –X

Ch – TRIGONOMETRY

1. If x tan45° cos 60° = sin60°.cot60° then find the value of x .

2. If $cot\emptyset = 1\ 3$ then find the value of $1 - cos\ 2\emptyset\ 2 - sin\ 2\emptyset$.

3. If sin (A+B) =1 and cos (A-B) = 3 2 then find the values of A & B .

4. If (1 +cos θ)(1-cosθ)cosec2θ =k , then find the value of 'k' ?

5. Eliminate θ from the equation x= asecθ , y= btanθ.

6. Prove that $tan\theta + sin\theta\ tan\theta - sin\theta = sec\theta + 1\ sec\theta - 1$.

7. Prove that $tan\theta - cot\theta = 2sin\ 2\theta - 1\ sin\theta cos\theta$.

8. Prove the identity $secA + tan\ A\ secA - tan\ A = [1 + sinA\ cos\ A\ ]2$.

9. If $tanA + 1\ tanA = 2$, then find the value of $cot2\theta + 1\ cot\ 2\theta$.

10. If $a\ cos\theta - bsin\theta = x\ and\ asin\theta + bcos\theta = y\ then\ prove\ that\ a2 + b2 = x2 + y2$.

11. If $asin3\theta = bcos3\theta = sin\theta\ cos\theta\ and\ asin\theta = bcos\theta$, $then\ prove\ that\ a2 + b2 = 1$.

12. If $sin\ x - 20° = cos\ 3x - 10\ °, then\ find\ the\ value\ of\ x$.

13. In ΔPQR , $right\ angled\ at\ Q$, $PR + QR = 25\ cm\ and\ PQ = 5\ cm$. $Determine\ the\ values\ of$ sin P, cos $P\ and$ tan P .

14. If $tan\theta = cot\ 30° + \theta\ find\ the\ value\ of\theta$.

15. If $cos9\alpha + sin\alpha\ and\ 9\alpha < 90°$, $find\ the\ value\ of$ tan 5α .

16. If tan A =1 and sin B = 1 2 $then\ find\ the\ value\ of$ cos $A + B$ where A and b are both acute angles.

17. If $sin2A - cos2A = 2, find\ the\ value\ of\ A$.

18. Eliminate θ , $x = asec\theta, y = btan\theta$.

19. If cosec θ – sinθ =m and sec θ –cos θ =n then prove that $(m2n)23 + * (mn2)23 = 1$.

Suppose two persons Anil and Ravi are watching the tower. Anil makes an angle sinθ and Ravi makes an angle cosθ and the relation between their angles is defined as 4sinθ = 3cosθ , then (i) find the value of$4sin3\theta - 3cos3\theta + 19$ (ii) Which mathematical concept is used to determine the above problem?

1. Suppose two persons Anil and Ravi are watching the tower. Anil makes an angle sinθ and Ravi makes an angle cosθ and the relation between their angles is defined as 4sinθ = 3cosθ , then (i) find the value of$4sin3\theta - 3cos3\theta + 19$ (ii) Which mathematical concept is used to determine the above problem?

1. What do you mean by an electric circuit?

2. State the factors affecting resistivity.

3. Define potential difference and its S.I unit.

4. State Joule's law of heating effect.

5. State the physical quantity which is known as the driver of electric current.

6. What is the cause of potential difference?

7. Resistance of a wire is R Ω. What will be its new resistance if it is stretched double of its original length?

8. An electric heater is rated 250 V and 500 W. Calculate the electrical energy consumed in 5 hours.

9. What is the relation between power and energy.

10. Name the devices that are based on heating effects of electric current.

11. A battery of emf 3 V is connected in series with a 10 Ω and with a parallel combination of resistance 3 Ω and 6 Ω. Calculate (a) resistance of parallel combination (b) current in the circuit.

12. Explain series combination of three resistances.

13. Derive the expression for three resistors connected in parallel.

14. Write advantages of parallel combination over series combination.

15. A 4 Ω resistance is bent in the form of a circle. Find the effective resistance between the ends of the diameter.

16. State Ohm's Law and write its mathematical form.

17. A wire is 1 metre long , 0.2 mm diameter and has the resistance of 10 Ω. Calculate the resistivity.

18. Write the factors affecting resistance.

19. Derive the relation between current and number of electrons.

20. What physical quantities remains same for all the resistors in series combination.

1. Define the following- Development, National Income, Average Income and Sustainable Development.

2. Explain the following points- (a) Body mass index (b)Literacy Rate (c)Infant mortality rate (d)HDI (e)Economic Planning (e)Life Expectancy Rate (f)Human Development (g)Gross Enrolment Ratio (h)Net Attendance Ratio (i) PDS

3. How can we achieve our hopes and possibilities in real life?

4. Mention two points what people usually desire

5. What is considered to be one of the most important attributes for comparing countries?

6. Which countries according to the World Development Report, 2006 are called rich countries and low-income countries

7. What was the per-capita income of India in 2004 and 2015-16?

8. How is the development report published by the World Bank and UNDP different?

9. How can sustainable development be achieved?

10. What are the other criteria used beside income to determine the development of a nation?

11. Why different categories of persons do not have same notions of development

12. What are non-monetary goals?

13. The calculation of per capita income of all countries is made in- (a) Rupees (b) Dollars (c)Yen (d) Pounds

14. Which is not an important goal of our life (a) Good Education (b) Blood Donation (c) High salaried job (d)Facilities for going abroad

15. A person is considered as overweight if his BMI is (a) more than 25 (b) less than 18 (c)less than 20 (d) less than 22

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प्रश्नावली –01
विषय –हिन्दी
कक्षा – दसवीं
बालगोबिन भगत

1. बालगोबिन भगत गृहस्थ थे, फिर भी उन्हें साधु क्यों कहा गया है?

2. 'बालगोबिन भगत के संगीत में जादू था।' स्पष्ट कीजिए।

3. प्रभाती किसे कहा जाता है?

4. 'उनकी संझा' से लेखक का क्या आशय है?

5. भगत की पुत्रवधू उन्हें छोड़कर अपने भाई के साथ क्यों नहीं जाना चाहती थी?

6. भगत जी ने परंपरा से हटकर कौन –से दो कार्य किए ?

7. 'अब बुढ़ापा आ गया था किन्तु टेक वही जवानी वाली।'

– रचना के आधार पर वाक्य भेद बताइये ।

8. भगत के गंगा –स्नान का मुख्य उद्देश्य क्या होता था?

9. बालगोबिन भगत के किन गुणों के कारण लोगों को कुतूहल होता था?

10. प्रेम और मोह में क्या अंतर होता है? पाठ के आधार पर स्पष्ट कीजिए।

11. भगत स्वाभिमानी थे । स्पष्ट कीजिए ।

12. बालगोबिन भगत के जीवन से क्या प्रेरणा मिलती है?

13. भगत की पतोहू की क्या इच्छा थी? क्या उसकी इच्छा पूरी हो सकी?

14. बालगोबिन मृत्यु को दुख का कारण न मानकर उत्सव का दिन क्यों मानते थे?

15. आत्मा के संबंध में बालगोबिन के क्या विचार थे?

16. 'धीरे –धीरे मन तन पर हावी हो जाता' से क्या आशय है?

17. बेटे की मृत्यु पर बालगोबिन ने अपनी भावनाएँ किस तरह प्रकट कीं?

18. अपनी पतोहू के लिए बालगोबिन ने क्या प्रबन्ध किया?

19. भगत जी ने अपने बेटे का क्रिया –कर्म कैसे किया?

20. बालगोबिन कबीरपंथी थे –स्पष्ट कीजिए।