MATHS

BOOKS - UNITED BOOK HOUSE

BIDHANNAGAR GOVT, HIGH SCHOOL

Exercise

1. Amount of $Rs\frac{a}{x}$ in x years is Rs S. The rate of interest per annum is

A. Rs 100(S/a+1/x)`

B. $Rs100\left(\frac{S}{a}-\frac{1}{x}\right)$

C. $Rs\frac{S}{a}+\frac{1}{x}/100$

D. none of these

Answer:

Watch Video Solution

2. $a\ \alpha\ b^{\frac{3}{2}}$ and b = 4 when a=8. Then find relation between a and b.

A. $a=b^3$

B. $a^2=b^2$

C. $a^3 = b^3$

D. $a^2 = b$

Answer:

Watch Video Solution

3. In cyclic quadrilateral ABCD, BC is diamter. If $\angle ABC = 62^\circ$ then $\angle ADB$=

A. 65°

B. 28°

C. 23°

D. 118°

Answer:

Watch Video Solution

4. Fill in the blanks

If the ratio of the volume of two sphere is 1:8, then the ratio of their curved surface area will be_____.

A. $1:8$

B. $1:2$

C. $1:16$

D. $1:4$

Answer:

Watch Video Solution

5. If $\cot\alpha = \tan(\beta+\delta)$ then $\alpha+\beta+\delta$=

A. 0

B. $\frac{\pi}{4}$

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

D. π

Answer:

Watch Video Solution

6. Median of 100,200,22,24,10,12,14,15,18,20 is

A. 10

B. 12

C. 18

D. 19

Answer:

 Watch Video Solution

7. Fill n the blanks

At present the population of village is P and if increased rate of populaton per year be R%, then the population was before N years_____.

 Watch Video Solution

8. If the ordered pairs (x-2,2y+1) and (y-1,x-2) be equal then find x,y

Watch Video Solution

9. Fill n the blanks

if the angle of elevation a kite is 60° and the length of thread is $20\sqrt{3}$ metres, then the height of kite above the ground is___.

Watch Video Solution

10. The geometric mean of numbers observations $x_1, x_2, x_3, \ldots, x_n$ is

Watch Video Solution

11. The volume of a right circular cylindre, 14 cm in height, is equal to that of a cube whose edge is 11 cm. The radius of the base of the cylinder is___

Watch Video Solution

12. Fill n the blanks

The sides of an equilateral triagnle are the__of its incircle.

Watch Video Solution

13. Write True or False

If the ratio of the capital of A,B,C is $\frac{1}{6}:\frac{1}{5}:\frac{1}{4}$ then the profit share will be distribute in the ratio of 4:5:6. Two similar triangles are always congruent.

Watch Video Solution

14. Write True or False

Total interest of Rs y and y^2 years at the rate of y% simple interest per annum is Rs y^3.

Watch Video Solution

15. Write True or False

If the ratio of the capital of A,B,C is $\frac{1}{6}:\frac{1}{5}:\frac{1}{4}$ then the profit share will be distribute in the ratio of 4:5:6.If one root of the equation

$px^2 - 5x + 6 = 0(P \neq 0)$ is reciprocal to each other then P = 1.

Watch Video Solution

16. Write True or False

If the ratio of the capital of A,B,C is $\frac{1}{6} : \frac{1}{5} : \frac{1}{4}$ then the profit share will be distribute in the ratio of 4:5:6. Two similar triangles are always congruent.

Watch Video Solution

17. Write True or False

Mode of 3,4,5,2,3,4,1,6,4,2 is 4.

Watch Video Solution

18. Find the simple interest on Rs.68,000 at 50/3% per annum for 9 months is?

A. 8000

B. 8500

C. 7500

D. 9000

Answer:

Watch Video Solution

19. If $a = \frac{1}{2+\sqrt{3}}$ and $b = \frac{1}{2-\sqrt{3}}$, then $\left(\frac{1}{a+1} + \frac{1}{b+1}\right)$=?

Watch Video Solution

20. O is the circumcentre of $\triangle ABC$ and D is the midpoint of BC, if $\angle BAC = 40^\circ$, then $\angle BOD$=?

Watch Video Solution

21. In $\triangle ABC$, DE||BC and if AD:BD = 3:1 then DE:BC=?

Watch Video Solution

22. Express $1 + 4\cos ec^2\theta . \cot^2\theta$ as a perfect square.

Watch Video Solution

23. In a partnership business, the ratio of capitals of Pathik, Pabirta and Partha is $\frac{1}{2}:\frac{1}{3}:\frac{1}{4}$. After 4 months Pathik withdraws $\frac{1}{2}$ of his capitl and after 8 months of it the total is Rs 6078. calculate the profit share of Pathik.

Watch Video Solution

24. If the sum of the roots of the equation $x^2 - x = K(2x - 1)$ is zero, then find the value of K.

Watch Video Solution

25. Convert 83.12° into degrees, minutes and seconds.

Watch Video Solution

26. If the volume, base area and height of a right circular cone are V cu unit, A sq.unit ant H unit respectively, then find the value of $\frac{AH}{V}$.

Watch Video Solution

27. Sum of length, breadth and height of a cuboid is 25cm and the total surface area of it is 264 sq.cm. Find the length of its diagonal.

Watch Video Solution

28. x and u are two variables with relation $x = \frac{U - 15}{10}$. If the mean value of u is 20, then find the mean value of x.

Watch Video Solution

29. Answer any one question : The difference between simple interest and compound interest for 2 years of a sum of money becomes ₹. 80 at 4% interest per annum. Calculate the sum of money.

Watch Video Solution

30. Dipu, Rabeya and Megha started a partnership business on 1st January of last year with capitals of Rs 50,000 ,Rs 60,000 and Rs 70,000 respectively. On the 1st April, Rabeya

invested Rs 10,000 more money but on 1st June Megha withdrew Rs 10,000. If the total profit upto 31th December was Rs 39,240, then calculate the profit share of each one of them on the basis of the ratio of their capitals.

Watch Video Solution

31. Solve: $\frac{x}{x+1}+\frac{x+1}{x}=2\frac{1}{12}(x\neq 0,\ -1)$

Watch Video Solution

32. If a two digit positive number is multiplied by its unit digit, then the product is 189 and if the tens digit is twice of the unit digit, then find the unit digit.

Watch Video Solution

33. If $x = \sqrt{3} + \sqrt{2}$,find the value of $x^3 - \frac{1}{x^3}$.

Watch Video Solution

34. If $\frac{x}{y}\alpha x + y$ and $\frac{y}{x}\alpha x - y$, then show that $x^2 - y^2$= constant.

Watch Video Solution

35. If $\frac{1}{b+c} + \frac{1}{c+a} = \frac{2}{a+b}$, show that $a^2 + b^2 = 2c^2$,

Watch Video Solution

36. If a+b+c= 0 prove that $\frac{1}{2a^2 + bc} + \frac{1}{2b^2 + ca} + \frac{1}{2c^2 + ab} = 0$

Watch Video Solution

37. State and Prove Pythagoras theorem.

Watch Video Solution

38. If two tangents are drawn to a circle from a point outside it, them the line segments joining the point of contacts and the exterior point are equal.

Watch Video Solution

39. O is the centre of a centre having diameter AB. P is any point on the circle. Draw a perpendicular from P to AB, which meets AB at N. Prove that $PB^2 = AB.BN$

Watch Video Solution

40. AB and CD are two chords of a cricle. Extended BA and CD intersect at P. Prove that $\angle PCB = \angle PAD.$

Watch Video Solution

41. Draw the mean proportional of line segments of lengths 4 cm and 3 cm.

Watch Video Solution

42. use bal to draw the circumcircle of a right angled triangle having the adjacent. Sides of the right angle are 4cm and 3 cm in length.

Watch Video Solution

43. If $\sin\theta + \cos ec\theta = 2$ then find the value of $\sin^{10}\theta + \cos ec^{10}\theta$.

Watch Video Solution

44. Find the value of $\frac{4}{3}\cot^2 30^\circ + 2\sin^2 60^\circ - 2\cos ec^2 60^\circ - \frac{3}{4}\tan^2 30^\circ$.

Watch Video Solution

45. Prove that $\tan 7^\circ \tan 23^\circ \tan 60^\circ \tan 67^\circ \tan 83^\circ = \sqrt{3}.$

Watch Video Solution

46. The length of shadow of a tower standing on the ground is found to be 60 metres more when the Sun's angle of elevation changes from 45° to 30°. Find the height of the tower.

Watch Video Solution

47. Find the number of zeros at the end of 100! ?

Watch Video Solution

48. Answer any two questions : Determine the volume of a solid right circular cone which can be made from a solid wooden cube of 4.2 dcm efge length by wasting minimum quantity of wood .

Watch Video Solution

49. If two circles of radii 7 cm and 3 cm touch each other extermally, then the distance between their centres will be 4 cm.

50. If the glass of tubelight is 105 cm long and external circumference is 11cm and it is 0.2 cm thick, then calculate the volume (in c.c) of the glass that will be required to make 5 such tube light.

51. Find the median of the following frequency distribution table.

Marks	0-10	10-30	30-60	60-70	70-90
number of students	7	10	23	50	6

Watch Video Solution

52. Find the mode of the following frequency distribution table.

Class limit	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
frequency	2	6	10	16	22	11	8	5

Watch Video Solution

53. Profit of 100 shops in village are given below.

find mean profit?

Profit (₹)	0-50	50-100	100-150	150-200	200-250	250-300
Number of shops	10	16	28	22	18	6

Watch Video Solution