MATHS

BOOKS - UNITED BOOK HOUSE

SUJAPUR HIGH SCHOOL

Exercise

1. If the principal is double in ten years, then the rate of simple interest per annum is

A. 5%1

B. 0.1

C. 3.15

D. 0.2

Answer:

2. If $x\alpha\dfrac{1}{y}$ then

A. $x = \dfrac{1}{y}$

B. $y = \dfrac{1}{x}$

C. xy = 1

D. xy = non zero constant

Answer:

3. ABCD is a cyclic quadrilateral. If $\angle A = 80°$, then $\angle C$=

A. $50°$

B. 200°

C. 100°

D. 180°

Answer:

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4. Sexagecimal value of $\dfrac{\pi}{12}$ is

A. 60°

B. 30°

C. $45°$

D. $15°$

Answer:

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5. If the surface area of a cube is $486m^2$. then its volume is

A. $63m^3$

B. $216m^3$

C. $256m^3$

D. $729m^3$

Answer:

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6. If the age of some students are 6,10,5,4,9,11,20,18 years, then their mean age is

A. 10 years

B. 1 2 years

C. 9 years

D. 9.5 years

Answer:

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7. Fill in the blanks

If the ratio between principal and amount in 1 year is 8:9, then the rate of simple interest per annum is_____.

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8. Fill in the blanks

the ratio of the sum of the roots and the product of the roots of an equation $7x^2 - 12x + 18 = 0$ is_____.

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9. If ABCD is a cyclic parallelogram then $\angle A$ is _____

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10. Fill in the blanks

If $\sin(\theta - 30°) = \dfrac{1}{2}$ then $\cos\theta =$ _____.

11. Write True or False

Height, radius and slant height of a right circular cone are the sides of the right angled triangle.

12. Fill in the blanks

Mean, median, mode are the measure of_____.

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13. Write True or False

The simple interest will be always greater than complete interest for some money at fixed rate of interest for 5 years.

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14. Write True or False

x^3y, x^2y^2 and xy^3 are in continued proportion.

15. Write True or False

The angle in the segment of a circle which is greater than a semicircle is an acute angle.

16. Write True or False

Simplest value of $(\sin 72° - \cos 18°)$ is 1.

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17. Write True or False

If the ratio of curved surface of two hemisphere is 4:9 then the ratio of their radius is 2:3.

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18. Write True or False

Mode of the data 2,3,9,10,3,3,9 is 10.

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19. The interest of some of money for one month at the rate of simple interest 5% per annum is Rs1. Find the some of money.

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20. In a partnership business of two partners total profit is Rs 1,500. If the capital and profit share of Rajib are Rs 6,000 and Rs 900 resp. Then find the capital of Aftab.

21. If $\dfrac{3x - 5y}{3x + 5y} = \dfrac{1}{2}$ find the value of $\dfrac{3x^2 - 5y^2}{3x^2 + 5y^2}$

22. If the sum and product of the roots of the

equation $kx^2 + 2x + 3k = 0 (k \neq 0)$ are

equal, then find the value of k.

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23. In $\triangle ABC$, D and E are the points on AB

and AC in such a way that DE||BC and AD:DB =

3:1. If EA = 3.6cm then AC=?

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24. Length of two chords AB and CD of a circle with centre O are equal. If $\angle AOB = 60°$ and CD = 6cm then find the length of the radius of the circle.

25. Find the length of the chords which is 8 cm away from the centre of a circle with length of radius is 17 cm.

26. If $\tan 4\theta \times \tan 6\theta = 1$ and 6θ is a positive acute angle, then find the volume of θ.

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27. 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____.

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28. If the height and curved surface area of a right circular cylinder are 14 cm and 264 sq.cm respectively then find the volume of the cylinder.

29. The numerical values of volume of a solid hemisphere and its total surface area are equal. Find the length of the radius of the hemisphere.

30. Mean of a freqency distribution is 54, $\sum f_i x_i = 2200 + 5k$ and $\sum f_i = 40 + k$.

Find the value of k.

31. Throught the publicity of road safety programme, the street accidents are decreased by 10% in comparison to its previous year. If the number of street

accidents in this year in this year be 8748,then find the number of street accidents 3 years before.

32. Nivedita and Uma have started a business with capital Rs.3000 and Rs 5000 respectively. After 6 months Nivediata invested Rs. 4000 more but after 6 months Uma withdreq Rs. 1000. If the profit at the end of the year is Rs.

6175,, calculate the profit share of each of them.

33. Solve:

$$\frac{x}{x+1} + \frac{x+1}{x} = 2\frac{1}{12} \, (x \neq 0, \; -1)$$

34. If the price of 1 dozen pen is reduced by ₹. 6, then 3 more pens will be got in ₹. 30.

Calculate the price of 1 dozen pen before the reduction of price.

35. Simplify :

$$\frac{\sqrt{5}}{\sqrt{2}+\sqrt{3}} - \frac{3\sqrt{3}}{\sqrt{2}+\sqrt{5}} + \frac{2\sqrt{2}}{\sqrt{3}+\sqrt{5}}$$

36. If $x + y\alpha x - y$ show that $x^3 + y^3\alpha x^3 - y^3$.

37. If $\dfrac{x^2}{by+cz} = \dfrac{y^2}{cz+ax} = \dfrac{z^2}{ax+by} = 1$

then   show   that

$\dfrac{a}{a+x} + \dfrac{b}{b+y} + \dfrac{c}{c+z} = 1$

38. If (7x-5y):(3x+4y) = 7:11 then show that (3x-2y): (3x+4y) = 137 : 473

39. Answer any one question : Prove that angles in the same segment of a circle are equal.

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40. State and prove Pythagoras theorem.

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41. ABCD is a cyclic quadrilateral. If AB = DC, then prove that AC= BD.

42. In a triangle PQR, $\angle PQR = 90°$ S is any point onQR. Prove that $PS^2 + QR^2 = PR^2 + QS^2.$

43. Geometrically calculate the value of $\sqrt{23}$. (Only traces of construction are required).

44. Draw a triangle whose two side are 7.6 cm and 6 cm in length and the angle between them is $75°$. Now draw the incircle of this triangle.

45. The length of radius of a circle is 28 cm. Determine the circular value of angle subteded by an arc of 5.5 cm. Length at the centre of this circle.

46. Prove that $\sqrt{\dfrac{1 + \cos 30°}{1 - \cos 30°}} = \sec 60° + \tan 60°.$

47. If $\sin\theta + \sin^2\theta = 1$, prove that $\cos^2\theta + \cos^4\theta = 1$.

48. From the point on the top of a palace of 60 metres height, it is observed that the angle of depression of the tip and the foot of a tower are $30°$ and $60°$ respectively. Find the height of the tower.

49. The height of two towers are 180 metres and 60 metres respectively. If the angle of elevation of the top of the 1st tower from the foot of second tower is $60°$, then calculate what is the angle of elevation of the top of the second tower from the foot of the 1st.

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50. A cuboidal tank is filled with diesel. That amount of diesel is poured into 240 tins in

such a way that each of the tins volume is 15 lit. If the breadth of the tank is 1.5 m and the height of the tank is $\frac{3}{5}th$ times of its length, then find the height and length of the tank.

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51. How many marbles with lengths of 3.5 cm radius may be formed by melting a solid sphere having 14 cm length of radius.

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52. If two solid spheres with the radii of 1 cm and 6 cm lengths are melted and a hollow sphere with the thickness of 1 cm is made, calculate the outer curved surface area of the hollow sphere.

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

Class	3-6	6-9	9-12	12-15	15-18	18-21	21-24
frequency	2	6	12	24	21	12	3

54. Find the median of the following data.

Class	51-60	61-70	71-80,	81-90	91-100	101-110
Frequency	4	10	15,	20	15	4

55. Draw an ogive (less than type) from the following frequency distribution table and hence find the median of this graph.

Class	50-55	55-60	60-65	55-70	70-75	75-80	80-85
frequency	2	8	12	24	34	16	4