

MATHS

BOOKS - UNITED BOOK HOUSE

KANACHI HIGH SCHOOL

Exercise

1. Compound interest and simple interest of sun of money at the same rate of interest per annum are equal in

- A. 1 years
- B. 2 years
- C. 3 years
- D. 4 years

Answer:



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2. If the product of two roots of the equation

 $x^2-3x+k=10$ is -2 then k=

A.-2

B. - 8

C. 8

D. 12

Answer:



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3. ABCD is a cyclic quadrilateral. If $\angle A=100^\circ$ then $\angle C$ =

A. 50°

B. 200°

C. 80°

D. 180°

Answer:



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4. If the length of the shadow of a vertical pole on the horizontal grounds is $\sqrt{3}$ times its

height, then the angle of elevation of the sun

is

A. 30°

B. 45°

C. 60°

D. 90°

Answer:



5. If the numerical values of volume and curved surface area of a sphere are equal, then the length of its diameter is

- A. 3 unit
- B. 6 unit
- C. 9 unit
- D. 8 unit

Answer:



6. If the mean of 6,7,x,8,y,16,16 is 9, then.

A.
$$x+y = 21$$

B.
$$x+y = 19$$

C.
$$x=y = 21$$

D.
$$x-y = 19$$

Answer:



7. If the total interest of some money in y years at the rate of simple interest x% per annum is Rs $\frac{Pyx}{25}$, then the principal becomes



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8. Fill in the blanks

Condition of two equal roots which are in opposite in sign of the equation $ax^2+bx+c=0$ is ____.



9. Fill in the blanks

Circumradius of a right angled triangle is half of its .



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10. Fill in the blanks

If $\sin \theta + \cos e c \theta = 2$, then $\cos \theta$ =____.



11. The volume of a solid sphere of diameter R is



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12. Fill in the blanks

Mode of 8,10,8,8,3,2,1,3,2,8,10,8 is_____.



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13. Write True or False

In a partnership business, profit share will be

distributed by the ratio of their capitals.



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14. x^3y , x^2y^2 and xy^3 are in continued proportion or not.



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

16. Write True or False

If $0^{\circ} \leq \theta \leq 90^{\circ}$ then $\cos \theta > \cos^2 \theta$.



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17. Write True or False

If the length of radius of a cylinder is half then the volume of its will be half of its previous volume. 18. Write True or False

If the mean of frequency distribution is 10

$$\sum f_i u_i = 200$$
 then total frequeny is 20.



19. If the compound interest of some money for 2 years at the rate of compound interest 5% per annum is Rs 615, then find the invested money.

20. In a partnership business Ram and Hori invest Rs 1,200 & Rs 800 respectively. At the end of the year if the profit share of Hari is Rs 120 then find the profit share of Ram.



21. What should subtracted from each element of 5:7 to make the result 2:3.

22. If $x \propto y, y \propto z$ and $z \propto x$, find the product of three variation constant.



23. If the length of the diagonals of a rhombus are 24 cm and 10 cm then the perimeter of it is



24. Two chords AB and AC of a circle are mutually perpendicular to each other. If AB = 4 cm and AC = 3 cm, find the length of the radius of the circle.



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25. If $r\cos\theta=3$ and $r\sin\theta=\sqrt{3}$ then find the value of r and θ .



26. If the ratio of three consequctive angles is 1:2:3 then find the value of 1st and 3rd angle.



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27. In right angled triangle ABC, $\angle B$ is right angle. If $AB=8\sqrt{3}cm$ and BC = 8cm, then find the value of $\angle ACB$ and $\angle BAC$.



28. 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 $\frac{AH}{V}$.



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29. If each edge of a cube is increased by 50%, then how much the total surface area of the cube will be increased in percent?



30. If $u_i=rac{x_i-25}{5}, \sum f_i u_i=20$ and

 $\sum f_i = 100$ then find the value of $ar{x}$.



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31. At the same rate of simple interest in percent per annum, if a principal becomes are amount of Rs 7100 in 7 yrs and of Rs 6200 in 4 yrs, then find the principal and rate of simple interest in percent per annum.



32. Pradipbabu and Aminabiib started a business jointly by investing Rs 24,000 and Rs 30,000 respectively at the beginning of the year. After 5 months pradipbabu invested Rs 4000 more. At the end of the year, if the total profit was Rs 27,716 then find the profit sphere of each of them.



33.

Solve:

$$rac{1}{a+b+x} = rac{1}{a} + rac{1}{b} + rac{1}{x}, x
eq 0, \ - (a+b)$$



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34. If 5 times of a positive whole number is less by 3 than twice of its square, then find the numbers?



35. If
$$x=\dfrac{\sqrt{7}+\sqrt{3}}{\sqrt{7}-\sqrt{3}}$$
 and xy = 1, show that $\dfrac{x^2+xy+y^2}{x^2-xy+y^2}=\dfrac{12}{11}$



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36. If a αb and $b\alpha c$, show that

 $a^{3} + b^{3} + c^{3} \alpha 5abc$.



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



38. If
$$\frac{x}{lm-n^2}=\frac{y}{mn-l^2}=\frac{z}{nl-m^2}$$
, then show that lx+my+nz=0



39. Answer any One queation: Prove that, if a perpendicular is draw on the hypotenuse from the right angled triangle, two triangles so formed on the two sides of the perpendicular are each similar to the original triangle and also similar to each other.



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40. Prove that if two tangents are drawn to a circle from a point outside it, then the line

segments joining the point of contacts and the exterior point are equal.



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41. ABCD is a cyclic quadrilaterla. Extended AB and DC intersect at P. Prove that PA.PB = PC.PD.



42. A straight line intersects one of the two concentric circles at the points A and B and

other at the points C and D. Prove that AC = BD.

43. Draw the incircle of an equilateral triangle



of side 7 cm.





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44. Geometrically find the value of $\sqrt{21}$,

45. Sum of two angles is 135° and their difference is $\frac{\pi^c}{12}$. Find the sexagicimal and circular values of these two angles.



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



 $an 30^\circ + y {\cot 60^\circ} = 0, 2x - y {\tan 45^\circ} = 1,$ then find the value of x and y.



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48. The height of two towers are 180 metres and 60 metres respectively. If the angle of elevtion of the top of the 1st tower from the foot of the 2nd tower is 60° , then calculate what is the angle of elevation of the top of the 2nd tower from the foot of the first?

49. A telegraph post is bent at a point above the ground due to storm. Its top just meets the ground at a distance of $8\sqrt{3}$ metres from its foot and makes an angle of 30° . Calculate at what heigh the post is bent and what is the height of the post.



50. The length of radius of cross-section of a solid circular rod is 3.2 dcm. By melting the rod 21 solid sphere are made. If the radius of the sphere is 8 cm, then find the length of the rod.



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51. The ratio of length breadth and height of a cuboid is 3:2:1 and its volume is 384 cc, then find the total surface area of a cuboid.



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52. Three spheres made of copper having the lengths of 3 cm. 4 cm and 5 cm radii are melted and large sphere is made Calculate the length of radius of large sphere.



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53. Ages of 100 patients in a hospital of Mahidual's locaity are given below. Find the

mean age of them.

Age (years)	10-20	20-30	30-40	40-50	50-60	60-70
No. of patients	12	8	22	20.	18 ·	20



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54. Find the median of heights of the students from the following frequency distribution.

Heighs (cm)	135-140	140-145	145-150	150-155	155-160	160-165	165-170
No. of students	6	10	19	22	20	16	7



55. Calculate the mode of the following

frequency distribution table.

Class	0-5	5-10	10-15	15-20	20-25	25-30	30-35
frequency	5	12	18	28	17	12	8

