

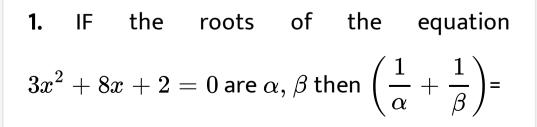


MATHS

BOOKS - UNITED BOOK HOUSE

VIDYASAGAR VIDYAPITH MIDNAPORE





A. $-\frac{3}{8}$ B. $\frac{2}{3}$ C. -4

D. 4

Answer:



2. A principal becomes twice its amount in 20 years at a certain rate of simple interest. At

the same rate of simple interest, that principal

becomes thrice of its amount in

A. 30 years

B. 35 years

C. 40 years

D. 45 years

Answer:

3. If $A+B=90^\circ$ and $\sin A=rac{1}{3}$, then sec

B=

A. 3

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

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

Answer:

4. AOB is a diamter of a circle with centreO, C is any point on the circle If AC = 6cm and BC = 8cm then AB=

A. 14 cm

B. 10 cm

C. 5 cm

D. 2cm

Answer:

5. If the area of a side face of a cube is 256

sq.m. then its volume is

A. $64cm^3$

 $\mathsf{B.}\,216cm^3$

 $\mathsf{C.}\,256cm^3$

 $\mathsf{D.}\,4096cm^3$

Answer:

6. If the median of arranging the ascending order of data 8,9,12,17,x+2,x+4,30,31,34,39 is 24 then x=

A. 20

B. 21

C. 22

D. 24

Answer:



7. Fill in the blanks

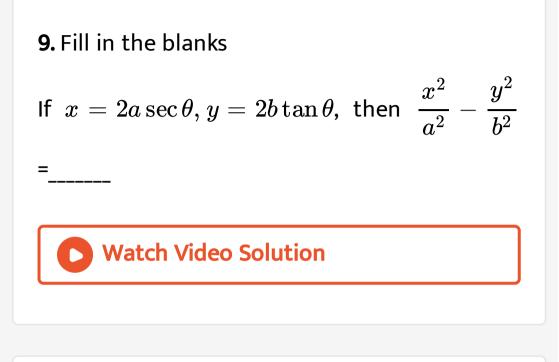
The compound interest of Rs_____ for 2

years at the rate of interest 5% p.a. is Rs 441.



8. Fill in the blanks

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Conjugate surds of \left(\sqrt{5}-1
ight) is_____.
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10. Fill in the blanks

Two circles touch each other externally. The

common tangetn from that point is

called_____common tangent.

11. Fill in the blanks

The curved surface area of a right circular cone is $\sqrt{6}$ times of its base area. The ratio of its height and radius is

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12. Fill in the blanks

If the mode of the data 12,5,x,10,13,5,13,12,x is 5

then x=___



In a business the ratio of the capital of A and B

is 5:4. if the profit share of A is Rs 800 then the

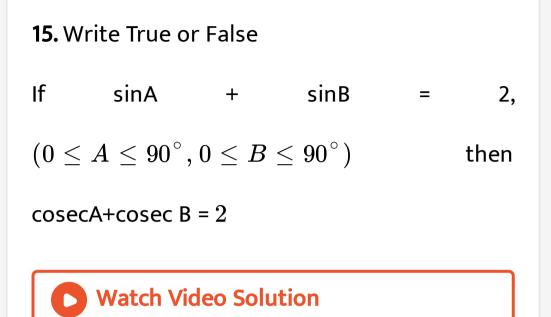
profit share of B is Rs 640.



14. Write True or False

If 2a = 5b= 8c then a:c = 4:1.

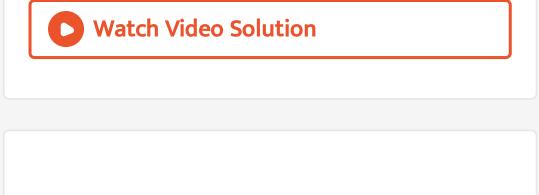




16. Write True or False

The volume of the largest solid cone that can

be cut out from a solid hemisphere of r units radius is $\frac{1}{3}\pi r^3$ cu. Unit.



17. Write True or False

If mean of the numbers 7,9,x,12,y,17 is 11 then

x+y = 30.



18. In 1 year if the ratio of principal and amount is 8:9 , then calculate the rate of interest per annum.





19. What should be added to each of

12,22,42,72 to make the sums proportional?

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20. In a business , A,B,C invest Rs 500 , Rs 450 and Rs 700 respectively. If the total profit at the end of year is Rs 1155 then what is the profit share of C.



21. If $x^2 + y^2 lpha xy$ then show that x + y lpha x - y



22. Length of two chords of a circle with centre at O are 6 cm and 8 cm. If the length from centre to the smaller chord is 4 cm then find the distance from centre of the greater chord.

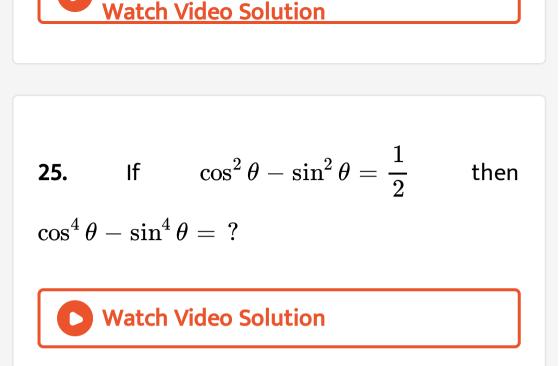


23. In $\triangle ABC$, AB=AC. If we draw a circle with diameter AB, the circle intersect BC at D, then BD:CD=?

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24. The lengths of radii of two circles are 8 cm and 3 cm and the distance between two centres is 13 cm. What is the length of the direct common tangent of two circle?





26. If $\sec 5\theta = \cos ec(\theta + 36^{\circ})$ and 5θ is a positive acute angle then find the value of $\cos ec5\theta$.

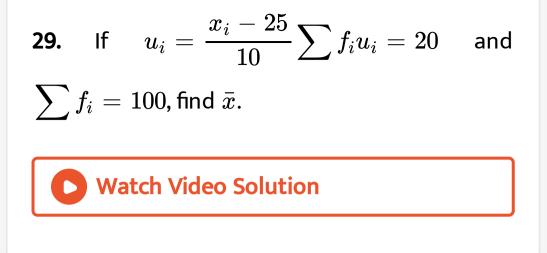
27. If the lengh of diagonal of a cube is 6 cm

then find the total surface area of it.

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28. The length of radius of a right circular cylinder is decreased by 50% and height is increased by 50%. How much percent of the volume will be changed?



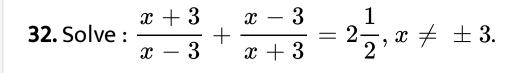


30. At present the sum of the number of students in all the secondary institutions in a district is 3993. If the number of students increased in a year was 10% of that in the previous year, then find the sum of the number of students in all the secondary institutions in the districts 3 years before?



31. 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.





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33. The spedd of a boat in still water is 8 km/hr. if the boat can go 15 kms down stream and 22 kms up stream in 5 hours, then calculate the speed of the stream.



34. If
$$x=rac{\sqrt{7}+\sqrt{3}}{\sqrt{7}-\sqrt{3}}$$
 and xy = 1, find the value of $rac{x^2+3xy+y^2}{x^2-3xy+y^2}$

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35. If 5 men can cultivate om 10 bighas of land in 9 days, calculate by theory of variation how long will be taken by 25 men for cultivating 30 bighas of land.

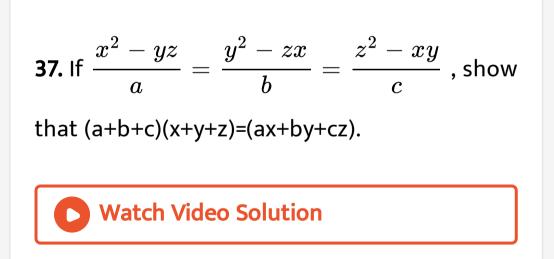


36. If a,b,c,d are in continued proportion then

show

that

$${\left({b - c}
ight)^2 + \left({c - a}
ight)^2 + \left({b - d}
ight)^2 = {\left({a - d}
ight)^2 }.$$



38. Prove that the front angle formed at the centre of a circle by an arc, is double of the angle formed by the same arc at any point on the circle.

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39. State and Prove Pythagoras theorem.

40. ABCD is a cyclic quadrilaterla. Extended AB

and DC intersect at P. Prove that PA.PB = PC.PD.

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41. Two chords AB and AC of the larger of two concentrci circles touch the other circle at points P and Q respectively. Prove that $PQ = \frac{1}{2}BC$.

42. Draw a square whose length of each side is

 $\sqrt{24}$ cm. Calculate its diagonal.



43. Draw a right angled triangle length of hypotenuse and one of another side are 9 cm and 5.5 cm respectively. Now draw the incircle of this triangle.

44. 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.

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45. If
$$5\sin^2 heta+4\cos^2 heta=rac{9}{2}$$
 , find the value of

 $\tan \theta$.

46. Findthevalueof $\cot 12^{\circ} \cot 38^{\circ} \cot 52^{\circ} \cot 78^{\circ} \cot 60^{\circ}$.**Watch Video Solution**

47. A man standing on a railway overbirdge of $5\sqrt{3}$ m height observed the engine of the train from one side of the bridge at an angle of depression of 30° . But just after 2 seconds, he observed the engine at an angle of

depression of 45° from the other side of the

bridge. Find the speed of the train.



48. If the angle of depression of two consecute kilometer stones on a road from an aeroplane are 60° and 30° respectively, then find the height of the aeroplane when two km stones stand on the same side of the aeroplane.



49. There sphere made of copper having the lengths of 3cm, 4 cm and 5 cm radii are melted and a large sphere is made. Calculate the length of diamter of the large sphere.

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50. 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 .



51. Height of a right circular cylinder is twice of its radius. If the height would be 6 times of its radius, then the volume of the cylinder would be greater by 539 cubic dcm. Calculate the height of the cylinder.



52. Draw the o give (both greater than type

and less than type) from the given frequency

distribution table and from it find the median.

Class		50-55 55-60		60-65 65-70		70-75 75-80		80-85
frequency	*7	2	8.	12	24	34	16	. 4 -

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53. Calculate the mean of the following data

by step devaition method.

		_			•
Class limit	0-30	30-60	60-90	90-120	120-150
frquency	12	15	,20	25	8



54. Find the mode of the following frequency

distribution table:

Class	45-54	55-64	65-74	75-84	85-94	95-104
frequency	8,	. 1,3	.19	32	12	- 6