MATHS

BOOKS - UNITED BOOK HOUSE

HINDU SCHOOL

Exercise

1. For any two sets A and B,prove that $B \subseteq (A - B)^c$

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2. Find the maximum and minimum value of $5\cos\theta + 12\sin\theta + 12$

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3. Find the amplitude of (1-i).

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4. Prove by factor method that the roots of the equation $9x^2 - 24x + 25 = 0$are complex number.

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5. Find the equation of the st.lin whose inclination in $150^\circ$and which is situated at a distance 10 unit from the origin.

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6. For any three sets A,B,C prove that

$A \cap (B - C) = (A \cap B) - (A \cap C)$

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7. Prove by venn diagram,$(A \cap B)^c = A^c \cup B^c$

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8. If $2\cos\theta = a + \frac{1}{a}$ and $2\cos\phi = b + \frac{1}{b}$,then prove that $2\cos(\theta - \phi) = \frac{a}{b} + \frac{b}{a}$

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9. Prove that if $x = a(\cos\theta + \sin\theta\sin 2\theta)$ and $y = a(\sin\theta + \cos\theta\sin 2\theta)$, then show that $(x+y)^{2/3} + (x-y)^{2/3} = 2a^{2/3}$

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10. For any complex number z, show that the minimum value of | z| + | z -1 | is 1.

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11. Find the amplitude of $\left(-2-i2\sqrt{3}\right)$ and $\left(\sqrt{3}-i\right)$.Hence find the amplitude of $\frac{-2-i2\sqrt{3}}{\sqrt{3}-i}$

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12. Solve : $\left|x^2+4x+3\right|+2x+5=0$

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13. The coordinates of A and B are (1,3)and (2,1) respectively and P is a moving point on the straight line x+7y=12.Find the locus of the centroid of the triangle ABP.

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14. Prove that the disgonals of the parallelogram whose sides are $\sqrt{3}x + y = 0$, $\sqrt{3}y + x = 0$,'sqrt3x+y=1'and $\sqrt{3}y + x = 1$are perpendicular to each other.

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15. If the two adjacent vertices of a square are (3,4)and (1,-1,) then find the length of the diagonal.

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16. State the Factor Theorem of algebra.

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17. Show that if n be odd, x + 1 is a factor of $x^n + 1$.

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18. Find $\Delta^2\left(e^{ax+b}\right)$ taking h = 1.

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19. State the classical definition of probability.

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20. What are the limitations of the classical definition of probability?

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21. If 3 tickets are drawn randomly from 2n tickets numbered 1, 2, 3,.....,2n, find the probability that the numbers on the chosen tickets are in arithmetic progression.

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22. State the desirable features of a good questionnaire.

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23. Define with example, ordinal data and nominal data.

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24. Draw a blank table showing the essential parts of a table.

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25. State the uses of an ogive.

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26. Define with examples "equally likely events" and "disjoint events".

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27. A_1, A_2 and A_3 are 3 events defınds on a simple space s.

Use sets-theory rotations to represent the following events.

Exactly one of them will occur.

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28. A_1, A_2 and A_3 are 3 events definds on a simple space s.

Use sets-theoric rotations to represent the following events.

At least two of them will occur.

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29. A_1, A_2 and A_3 are 3 events definds on a simple space s.

Use sets-theoric rotat6ions to represent the

following events.

None of them will occur.

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