

MATHS

BOOKS - JEEVITH PUBLICATIONS MATHS (KANNADA ENGLISH)

ANNUAL EXAMINATION QUESTION PAPER - 1

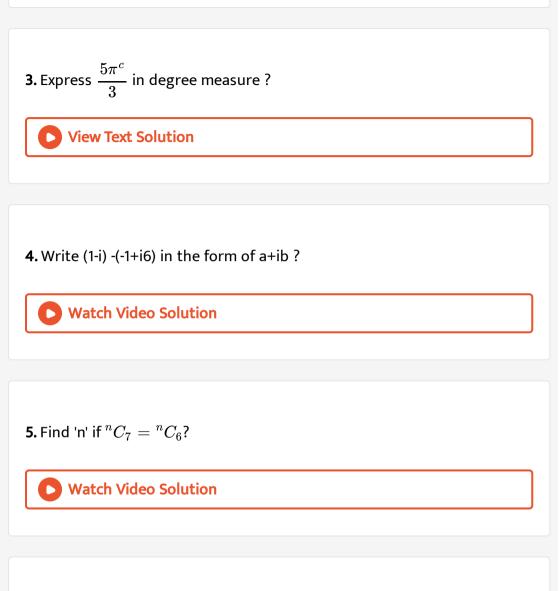
Section A

1. Let $A = \{1, 2\}$ and $B = \{3, 4\}$. Find the number of relations from A to

Β.



2. Write the power set of the set A={a,b}



6. Find the tenth term of G .P . 5, 25, 125___?

7. Write the slope of the line 3x+2y+1 = 0?



8. Evaluate :
$$\lim_{x
ightarrow 2} rac{x^4-16}{x-2}$$
 ?

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9. Write the converse and contrapositive of " if a number is divisible by 9

then its is divisible by 3"

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10. If $\frac{2}{11}$ is the probability of an event.What is the probability the event 'not A'

1. If $A imes B = \{(a, 1)(a, 2)(a, 3)(b, 1)(b, 2)(b, 3)\}$ find the sets A and B and hence find B imes A.

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 $U = \{x \colon \! x \le 10, \mathrm{x} \in N\} A = \{x \colon \! \mathrm{x} \in N, x \; \; ext{is prime}\} B = \{x \colon \! \mathrm{x} \in N, x \; \; ext{is prime}\}$

write $A \cap B$ in roster form.

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3. Find the range of the functions $f(x) = \sqrt{x-3}$.

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If

4. A wheel makes 360 revolutions in one minute. Through how many

radians does it turn in one second?



5. If sin $A=rac{3}{5}$ and A is in I quadrant then find sin2 A .

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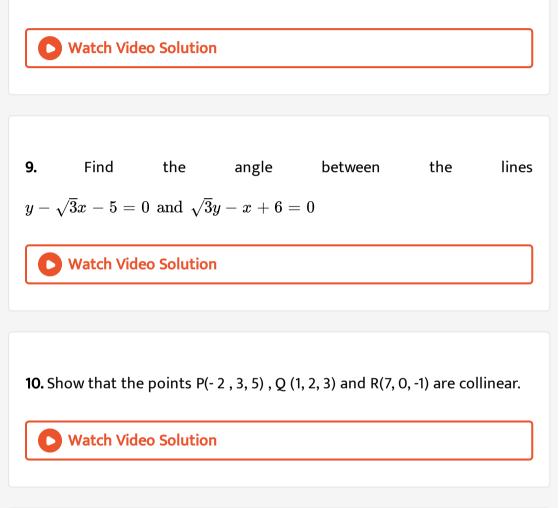
6. Write the multiplicative inverse of 2-3i ?

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7. Solve 3x - 2 < 2x + 1. Show the graph of the solution on number

line.

8. Find the equation of the straight line intersecting y - axis at a distance of 2 units above the origin & making an angle 30° with the positive direction of x-axis .



11. Evaluate
$$\lim_{x o 0} \left(rac{1-\cos x}{x}
ight)$$
 ?

12. Find the component statements of the compound statement "All integers are positive or negative" ?

13. Write the mean of the given data : 6,7,10,12,13,4,8,12 ?

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14. Given P(A)
$$= \frac{3}{5}$$
 and $P(B) = \frac{1}{5}$. Find P(A or B), if A & B are mutually

exclusive events.





1. In a survey of 600 students in a school, 150 students were found to be taking tea and 225 taking coffee, 100 were taking both tea and coffee. Find how many students were taking neither tea nor coffee ?



2. Let
$$f(x)=x^2, g(x)=2x+1$$
 be two functions. Then find

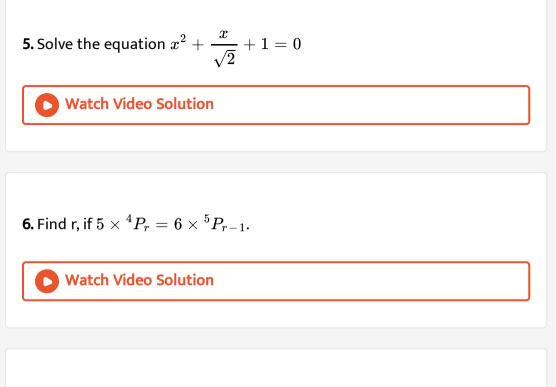
(i) (f + g) (x) (ii) (f - g) (x) (iii) (fg) (x)

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3. $\sin x + \sin 3x + \sin 5x = 0$



4. Express $1+i\sqrt{3}$ in polar form

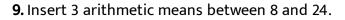


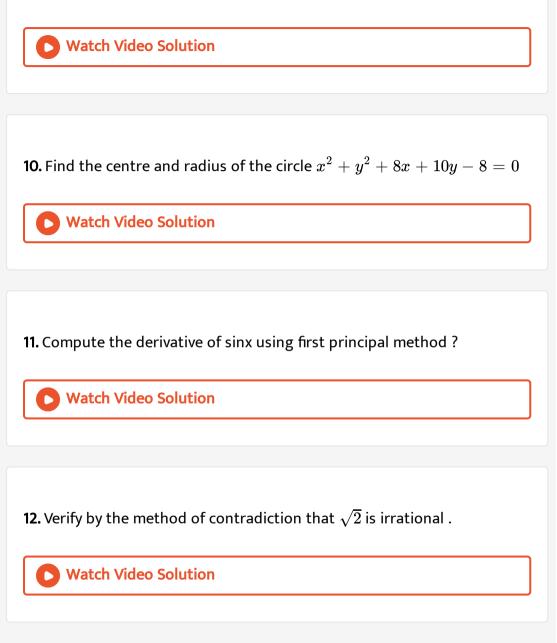
7. Find the coefficient of x^6y^3 in the expansion of $\left(x+2y
ight)^9$

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8. The sum of first three terms of a G.P is $\frac{39}{10}$ and their product is 1. Find

the common ratio and the terms.





13. If E and F are two evetns such that
$$P(E) = \frac{1}{4}, P(F) = \frac{1}{2}$$
 and $P(E \text{ and } F) = \frac{1}{8}$. Find P(not E and not F)



14. 4 cards are drawn from a pack of 52 cards .What is the probability of

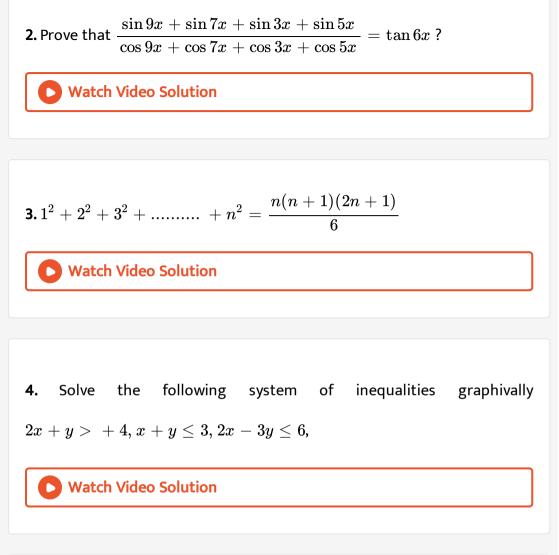
obtaining 3 diamonds and a spade ?

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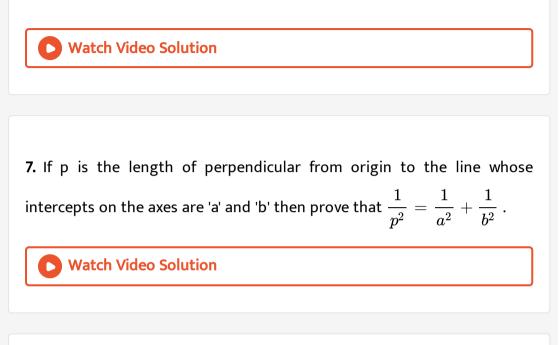
1. Define a modulus function . Draw its graph. Also write down its domain

and range.



5. A group consists of 7 boys and 5 girls . Find the number of ways in which a team of 5 members can be selected so as to have atleast one boy and girl.

6. State and prove Binomial theorem for a positive integer index.



8. Derive section formula in three dimensions for internal division . Also find the co-ordinates of the midpoint of the line joining the points $P(x_1, y_1, z_1)$ and $Q(x_2, y_2, z_2)$?



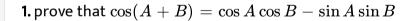
9. Prove that
$$\lim_{ heta
ightarrow 0} rac{\sin heta}{ heta} = 1.$$

10. Find the mean deviation about the mean for the following data.

Marks Obtained	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Number of Students	-	2	0	14	8	3	2

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Section E



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2. Find the sum to n terms of the series $5 + 11 + 19 + 29 + 41 + \dots$

