



MATHS

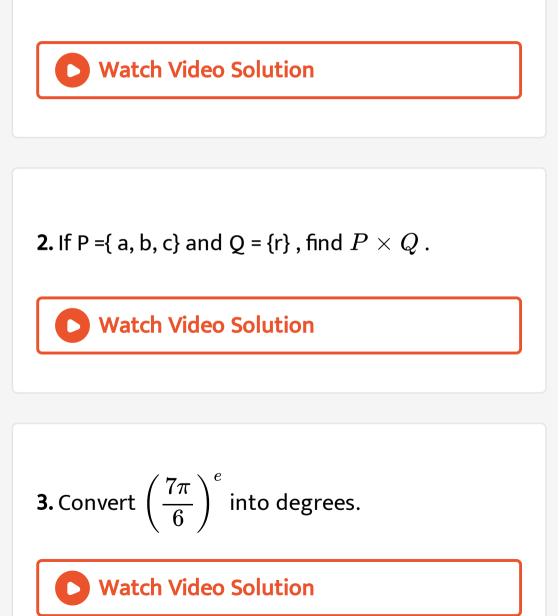
BOOKS - JEEVITH PUBLICATIONS MATHS (KANNADA ENGLISH)

ANNUAL EXAMINATION QUESTION PAPER - 2019 (NORTH) (WITH ANSWERS)

Part A I Answer The Following Questions

1. Write the following set in roster form A = { x is

a natural number less than 6}



4. Express
$$(-5i)\left(rac{1}{8}i
ight)$$
 in the form a + ib .

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6. Write the first three terms of the sequence

defined by $a_n=2n+5$.

7. Find the slope of the line passing throught

the points (3,-2) and (-1,2).



8. Evaluate :
$$Lt_{x
ightarrow 4} \left(rac{4x+3}{x-2}
ight)$$



9. Write the negation of the statement 'Australia

is a continent'



10. A coin is tossed 3 times and the outcomes are recorded. How many possible outcomes are there ?



Part B li Answer Any Ten Questions

1. If A={3,5,7,9,11},B={7,9,11,13},C={11,13,15} and

- $D=\{15,17\}$, find
- $A\cap (B\cup C)$

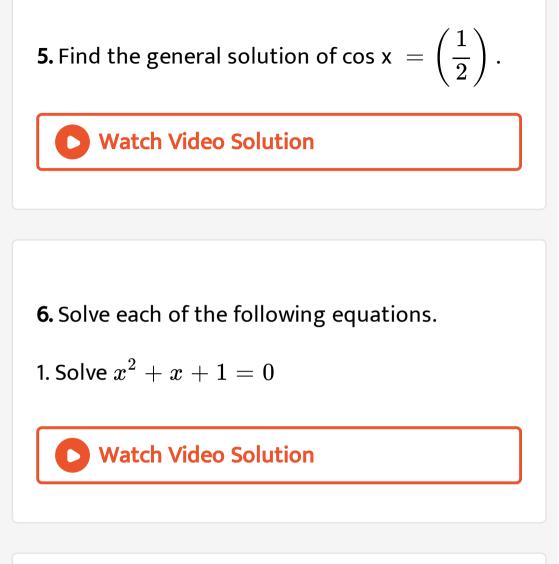
- **2.** If X and Y are two sets such that n (X) =17,n (
- Y) =23, and $\mathsf{n}(X\cup Y)=38$ find $\mathsf{n}(X\cap Y)$



- **3.** Let f={(1,1),(2,3), (0,-1), (-1, -3)} be a function from
- Z to Z defined by f(x) = ax + b, for some integers
- a, b. Determine a, b.



4. Find the radius of the circle in which a central angle of 60° intercepts an arc of length 37.4 cm (use $\pi = \frac{22}{7}$)



7. The marks obtained by a student of class XI in

the first and second terminal examination are 62

and 48 respectively. Find the minimum marks he

should get in the annual examination to have an

average of at least 60 marks .

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8. Find the equation of the line through the point (-2,3) and having the slope -4

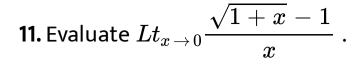
9. Find the distance of the point (3,-5) from the

line 3x - 4y - 26 = 0



10. Find the co-ordinates of the point P which divides the line segment joining the points A (1, - 2, 3) and B (3, 4 - 5) internally in the ratio 2 : 3







12. Write the component statement of the following compound statement and check whether they are true of false "All prime numbers are either even or odd"



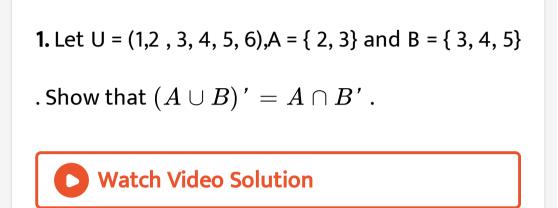
13. Two series A and B with equal means standard deviation 9 and 10 respectively . Which series is more consistent ?

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14. A committee of two persons is selected from two men and two women.What is the probability that the committee will have (i) no men (ii)two

men

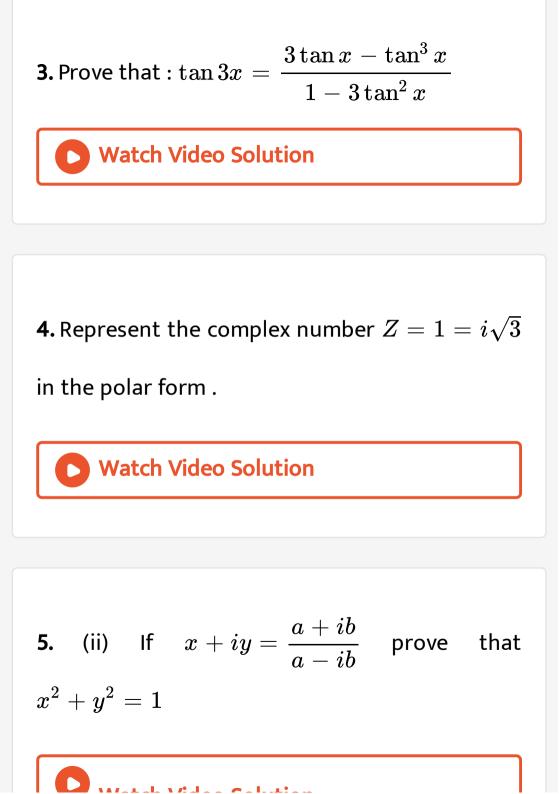




2. Let
$$f(x)=x^2, g(x)=2x+1$$
 be two

functions. Then find

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





6. In how many of distinct permutations of the letters in the word MISSISSIPPI do the 4 I's not some together?

7. Find the term independent of x in the expansion of $\left(\frac{3}{2}x^2 - \frac{1}{3x}\right)$.

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8. In an A.P if m^{th} term is n and n^{th} term is m, where m
eq n, find the p^{th} term .

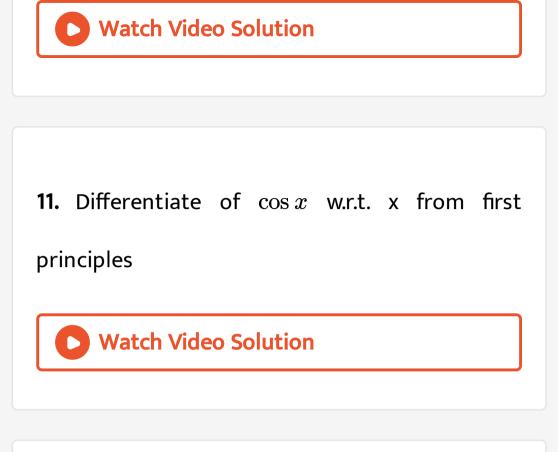
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9. Find the sum of the sequence 8, 88, 888, 8888, .

.. To n terms.

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10. Find the centre and radius of the circle $x^2 + y^2 + 8x + 10y - 8 = 0$



12. Verify by the method of contradiction that

 $\sqrt{2}$ is irrational .

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)

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14. One card is drawn from a well shuffled deck of 52 cards. If each outcome is equally likely, calculate the probability that the card will be (a) a diamond (b) not a diamond (c) a black card.



1. Define a modulus function . Draw its graph.

Also write down its domain and range.

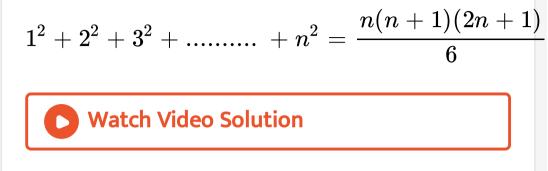


2. Prove that

$$\cos^2 x + \cos^2 \left(x + \frac{\pi}{3} \right) + \cos^2 \left(x - \frac{\pi}{3} \right) = \frac{3}{2}$$

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3.



4. Solve the following system of inequalities graphically:

 $5x+4y\leq 20, x\geq 1, y\geq 2$

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.

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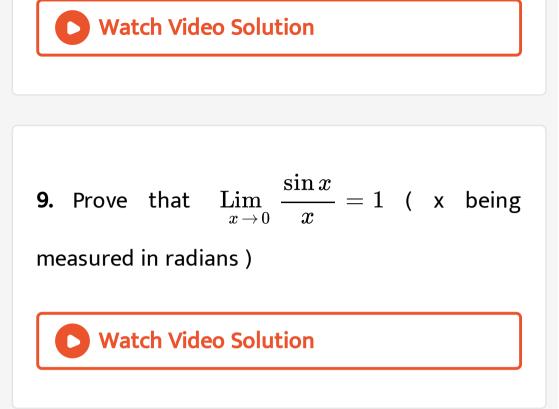
6. State and prove Binomial theorem for a

positive integer index.

7. Derive the equation of a straight line having the intercepts 'a' & 'b' on the X ane Y-axes respectively. Hence find the equation of the line intercepts -3 and 2 on the X and Y-axes respectively.

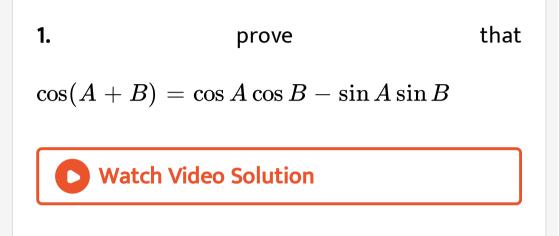
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8. Find the distance between two points in a three dimensional plane and hence find the distance between the points P(-2,3,5) and Q(1,2,3).



10. Find the mean for the following data

 Marks obtained	10-20	20-30	30-40	40-50	58-60	60-70	70-80
No of students	2	3	8	14	8	3	2



2. Find the sum of 'n' terms of 1.2

+2.3+3.4+4.5+.....



3. (a)Define a parabola and derive its equation in

