



MATHS

BOOKS - TELUGU ACADEMY MATHS (TELUGU ENGLISH)

IPE:MARCH-2018 [AP]



1. Find the value of x, if the slope of the line passing

through (2,5) and (x,3) is 2.

2. Find the sum of the squares of the intercepts of the

line 4x-3y=12 on the axes of co-ordinate.



3. Show that the points (1,2,3), (2,3,1) and (3,1,2) form an

equilateral triangle.

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4. Find the intercepts of the plane 4x+3y-2z+2=0 on the

coordinate axes.



5. Compute
$$Lt_{x
ightarrow 0}rac{e^{3x}-1}{x}.$$

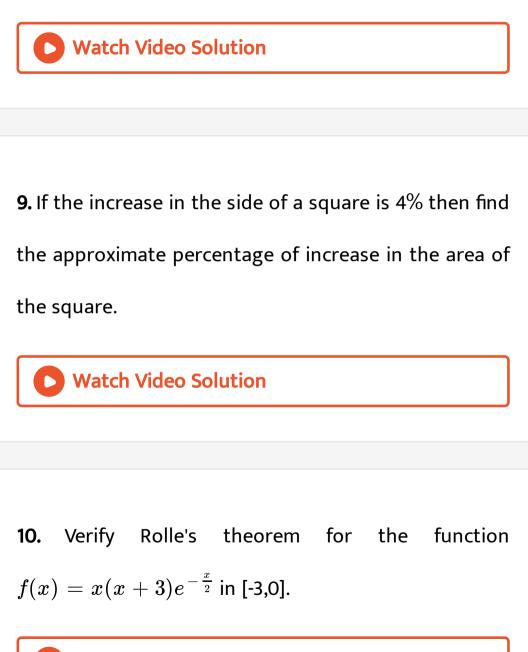
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6. Evalute
$$Lt_{x
ightarrow\infty}rac{11x^3-3x+4}{13x^3-5x^2-7}.$$

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7. If
$$f(x) = \sin(\log x), \, (x>0)$$
 then find f'(x)

8. If
$$y = x^4 + \tan x$$
 then find y".



1. Find the equation of the locus of P, if A=(2,3), B=(2,-3)

and PA +PB =8.

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2. When the origin is shifted to (-1,2) by the translation

of axes, find the transformed equation $x^2+y^2+2x-4y+1=0.$

3. Show that the lines

2x + y - 3 = 0, 3x + 2y - 2 = 0 and 2x - 3y - 23 = 0

are concurrent and find the point of concurrency.

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4. Find the real constants a , b, so that the function f

$${f given} \quad {f by} \quad f(x) = egin{cases} \sin x & ext{if} \;\; x \leq 0 \ x^2 + a \;\; ext{if} \;\; 0 < x < 1 \ bx + 3 \;\; ext{if} \;\; 0 < x < 1 \ bx + 3 \;\; ext{if} \;\; 1 \leq x \leq 3 \ -3 \;\;\; ext{if} \;\; x > 3 \end{array}$$
 is

continuous on R.

5. Find the derivative of sin2x from the first principle.



6. A particle is moving along a line according $s = f(t) = 4t^3 - 3t^2 + 5t - 1$ where s is measured in meters and t is measured in seconds. Find the velocity and acceleration at time t. At what time the acceleration is zero.



7. At any point t on the curve x=a(t+sint), y=a(1-cost), find the lengths of tangent, normal, subtangent and subnormal.

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Section C
1. Find the circumcentre of the triangle whose vertices

are (1,3) (0,-2) and (-3,1).



2. Show that the lines joining the origin with the points of intersection of the curve $7x^2 - 4xy + 8y^2 + 2x - 4y - 8 = 0$ with the line 3x - y = 2 are mutually perpendicular.

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3. Find the direction cosines of the two lines which are

connected by the relations

$$l-5m+3n=0, 7l^2+5m^2-3n^2=0$$

4. Find the derivative of $x^{\tan x} + (\sin x)^{\cos x}$ w.r. to x.

