Mathematics XII

Topic

Applications Of Maxima and Minima

Presented By

Avtar Singh Lec Math.

Mobile 98551-85351

Applications Of Maxima and Minima

Question

Divide a number 15 into two parts such that the square of one multiplied by the cube of other is a maximum.

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Question

A wire of length 28 m is to be cut into two pieces. One of the pieces is to be made into a square and the other into a circle. What should be the length of the two pieces so that combined area of the square and the circle is minimum.

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Question

Show that the surface area of a closed cuboid with square base and given volume is minimum when it is a cube.

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Question

Find the point on the parabola $y^2=2x$ which Is nearest to the point (-1,4)

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Question

Show that a cylinder of given volume open at the top has minimum total surface area provided height is equal to radius of base.

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Question

Show that the height of the right circular cylinder of maximum volume that can be inscribed in a given right circular cone of height h is 1/3 h.

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Question

Show that semi vertical angle of the right circular cone of given slaint height and maximum volume is $\tan^{-1} \sqrt{2}$.

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Question

A window consists of a semi circle with a rectangle on its diameter. Given perimeter of figure is 30 metres , find the dimensions of the window in order that area is maximum.

Thanks

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