



MATHS

BOOKS - RS AGGARWAL MATHS (HINGLISH)

PARABOLA

Solved Example

1. Find the coordinates of the focus and the vertex, the equations of the directrix and the

axis, and the length of the latus rectum of the parabola $y^2 = 8x$



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2. Find the coordinates of the focus and the vertex, the equations of the directrix and the axis, and the length of the latus rectum of the parabola $y^2 = -12x$



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3. Find the coordinates of the focus and the vertex, the equations of the directrix and the axis, and the length of the latus rectum of the parabola $x^2 = 6y$



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4. Find the coordinates of the focus and the vertex, the equations of the directrix and the axis, and the length of the latus rectum of the parabola $x^2 = -16Y$





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5. Find the equation of the parabola with focus at $F(3,0)$ and the directrix $x=-3$.



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6. Find the equation of the parabola with vertex at the origin and $y+3=0$ as its directrix. Also, find its focus.



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7. Find the equation of the parabola with vertex at $(0,0)$ and focus at $(0,2)$ Also, find the equation of its directrix.



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8. Find the equation of the parabola with vertex at the origin, passing through the point $P(3,-4)$ and symmetric about the y -axis.



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9. The equation of the parabola with vertex at the origin passing through $(2, 3)$ and the axis along x-axis is



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Exercise 22

1. Find the coordinates of the focus and the vertex, the equations of the directrix and the axis, and length of the latus rectum of the

parabola:

$$(i) y^2 = 12x \quad (ii) y^2 = 10x \quad (iii) 3y^2 = 8x$$



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2. Find the coordinates of the focus and the vertex, the equations of the directrix and the axis, and length of the latus rectum of the parabola:

$$(i) y^2 = -8x \quad (ii) y^2 = -6x \quad (iii) 5y^2 = -16x$$



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3. Find the coordinates of the focus and the vertex, the equations of the directrix and the axis, and length of the latus rectum of the parabola: (i) $x^2 = 16y$ (ii) $x^2 = 10y$ (iii) $3x^2 = 8y$



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4. Find the coordinates of the focus and the vertex, the equations of the directrix and the axis, and length of the latus rectum of the parabola:

$$(i) x^2 = -8y$$

$$(ii) x^2 = -18y$$

(iii)

$$3x^2 = -16y$$



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5. Find the equation of the parabola with vertex at the origin and focus at $F(-2, 0)$.



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6. Find the equation of the parabola with focus $F(4, 0)$ and directrix $x=-4$.



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7. Find the equation of the parabola with focus $F(0,-3)$ and directrix $y=3$.



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8. Find the equation of the parabola with vertex at the origin and focus $F(0,5)$.



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9. Find the equation of the parabola with vertex at the origin, passing through the point $P(5,2)$ and symmetric with respect to the y -axis.



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10. Find the equation of the parabola which is symmetric about the y -axis, and passes through the point $(2, -3)$.



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