BRAC UNIVERSITY

Inspiring Excellence

Department of Mathematics and Natural Sciences

MAT 110

# Conics

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1. Find the vertex, focus, equation of directrix and length of latus rectum of $x^2 - 2x + 8y + 17 = 0$.
2. Identify the type of conic and find centre, foci, vertices, and directrices of $\frac{x^2}{25} + \frac{y^2}{9} = 1$.
3. Identify the type of conic and find centre, foci, vertices, and directrices of $\frac{y^2}{144} - \frac{x^2}{25} = 1$.
4. Identify the type of conic and find centre, foci, vertices, and directrices of $\frac{x^2}{3} + \frac{y^2}{10} = 1$.
5. Find the vertex, focus, equation of directrix and length of latus rectum of $y^2 - 4y - 8x + 12 = 0$.
6. Identify the type of conic and find centre, foci, vertices, and directrices of $\frac{y^2}{16} - \frac{x^2}{9} = 1$.
7. Find the vertex, focus, equation of directrix and length of latus rectum of $y = -5(x + 4)^2 + 9$.
8. Find the vertex, focus, equation of directrix and length of latus rectum of $y = -2(x + 13)^2 - 5$.
9. Find the vertex, focus, equation of directrix and length of latus rectum of $y = 3(x - 12)^2 + 5$.
10. Identify the type of the conic $3x^2 - 30x - y + 77 = 0$ and find vertex, focus, axis and directrix.
11. Identify the type of the conic $y^2 - 6y - 8x + 49 = 0$ and find vertex, focus, axis and directrix.