

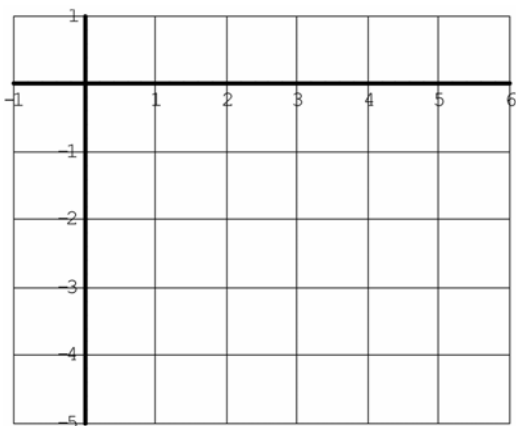
Pre - Calculus
Mathematics 40S



STANDARDS TEST PRACTICE EXAM

CONICS

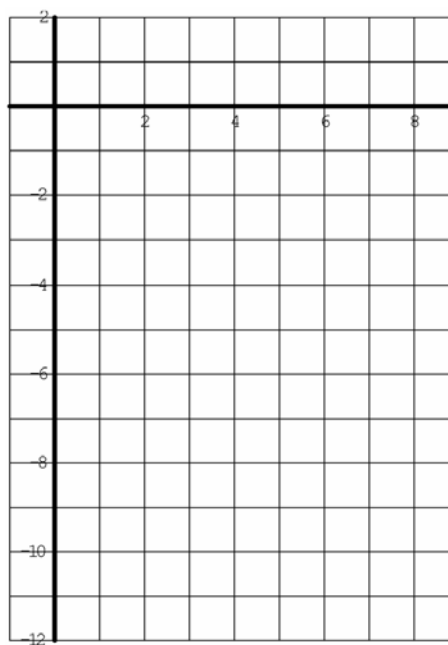
1. Sketch the graph and write the equation of a circle with a centre at (3, -2) and is tangent to the x - axis.



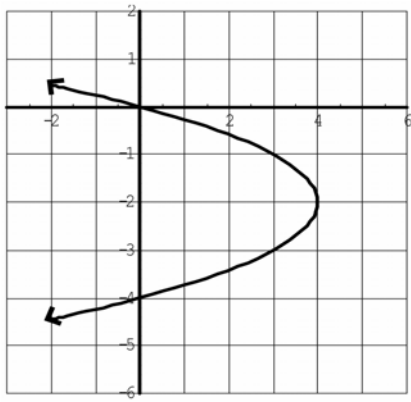
2. Identify the conic represented by the equation $x^2 - 6x = y + 3$

3. State the coordinates of the vertex in the relation $y^2 = 2x + 4$

4. Change the following to standard form, then sketch: $4y^2 + 40y - 4x^2 + 32x + 20 = 0$



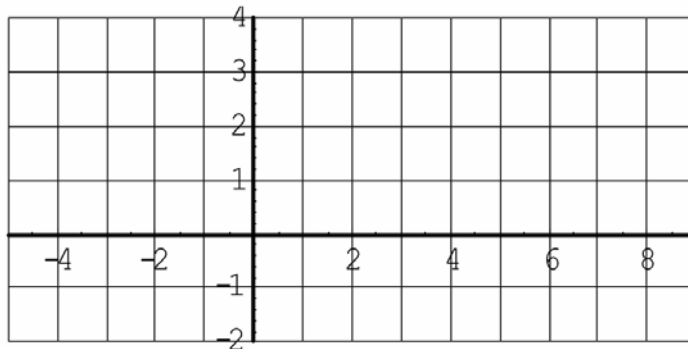
5. a) Given the parabola below, find the equation if the vertex is at (4, -2)



- b) Verify the intercepts algebraically

6. A conic is represented by $x^2 - 4x + 9y^2 - 18y = 23$

- a) Sketch the conic

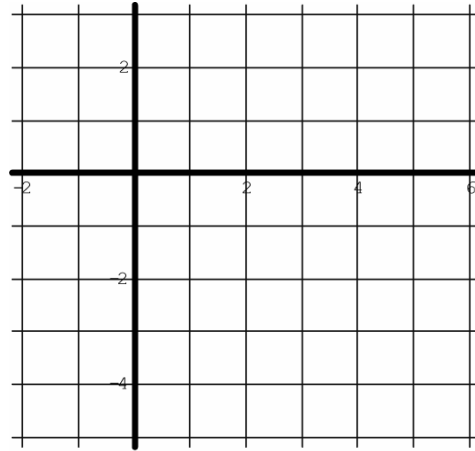


- b) State the domain & range

7. Identify the conic with the equation $3x^2 - y^2 - 7x + 2 = 0$

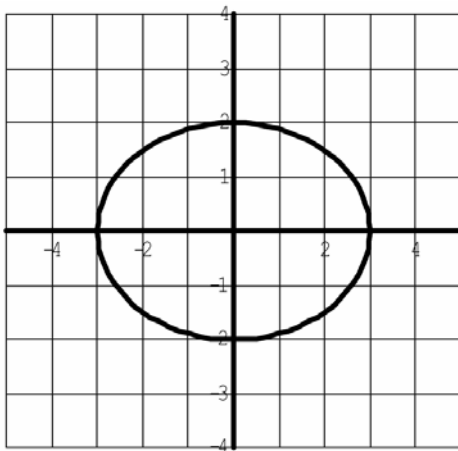
8. The equation of a circle is given by the equation $2x^2 + 2y^2 - 8x + 4y - 22 = 0$

a) Sketch the conic



b) State the radius

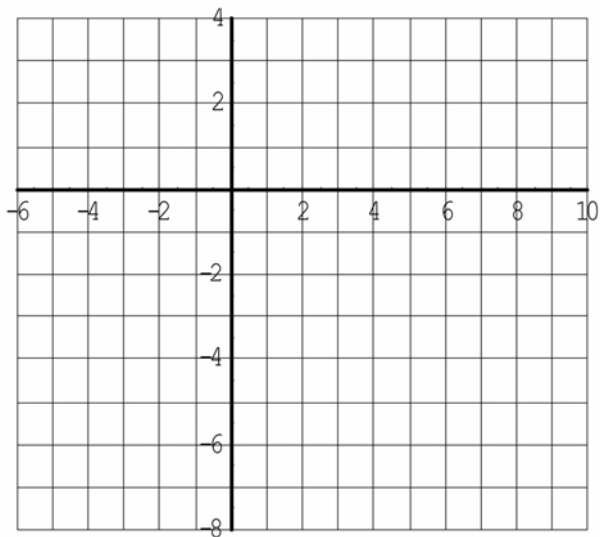
9. Determine the equation of the ellipse shown below



10. The equation of a conic is $\frac{(x-2)^2}{9} - \frac{(y+2)^2}{4} = 1$

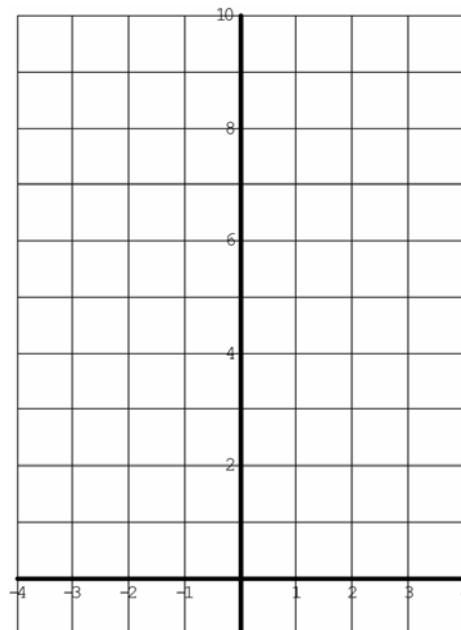
a) Identify this conic section

b) Sketch a clearly labeled graph

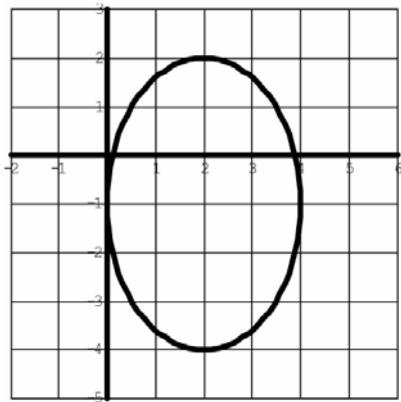


c) State the domain & range

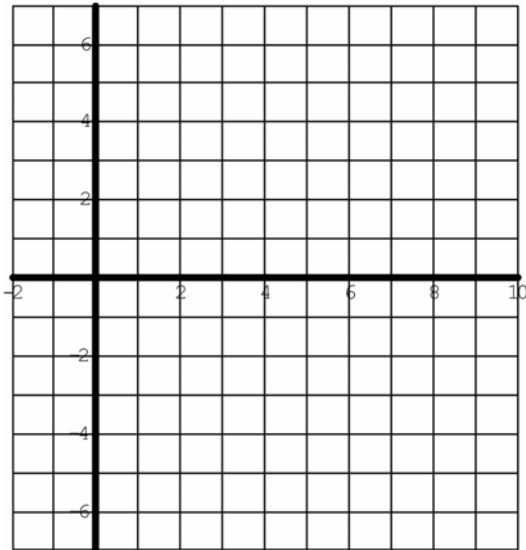
11. Find the coordinates of the vertices and sketch the equation: $9x^2 + 4y^2 + 40y + 64 = 0$



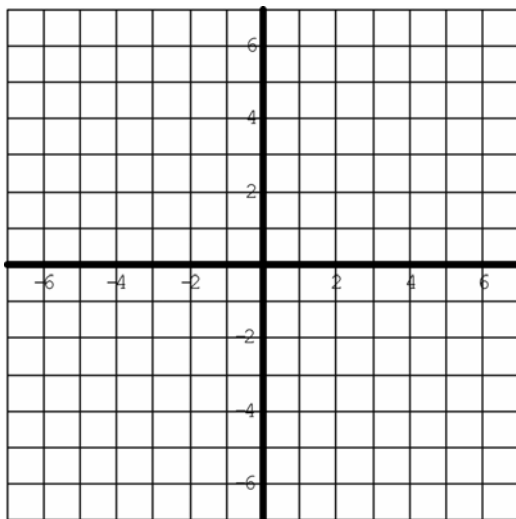
12. Find the equation of the ellipse sketched below:



13. Sketch the equation and state the domain and range for: $\frac{(x-4)^2}{4} - \frac{y^2}{9} = 1$



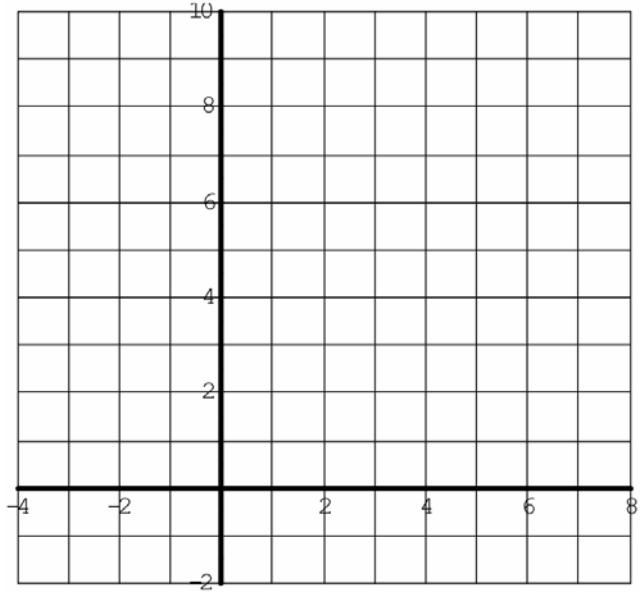
14. Sketch the equation and state the axis of symmetry for: $\frac{y^2}{16} - \frac{x^2}{25} = 1$



15. The equation of a conic is $25x^2 - 9y^2 - 100x + 72y - 269 = 0$

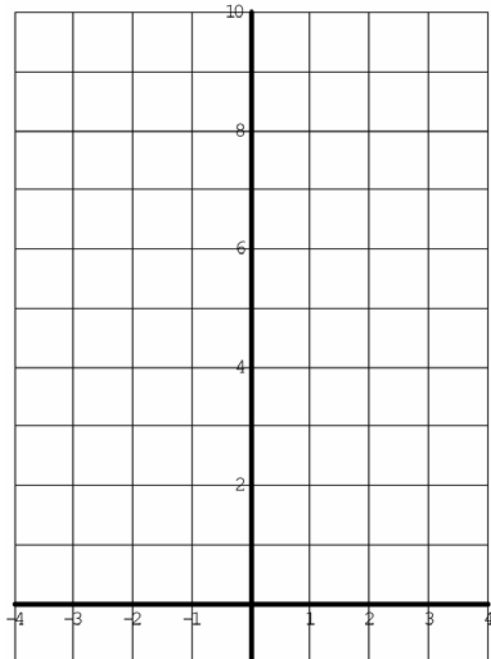
a) Write the equation in standard form

b) Sketch the graph



16. An ellipse has the following vertices: A(0, 9), B(2, 5), C(0, 1), and D(-2, 5)

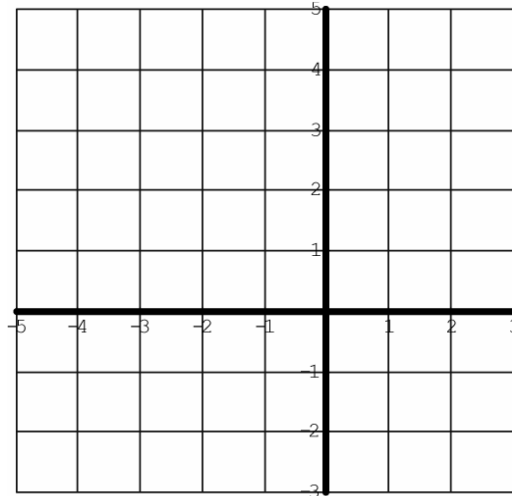
Draw the ellipse and determine the equation.



17. For the conic $2y^2 - 2x - 4y - 6 = 0$

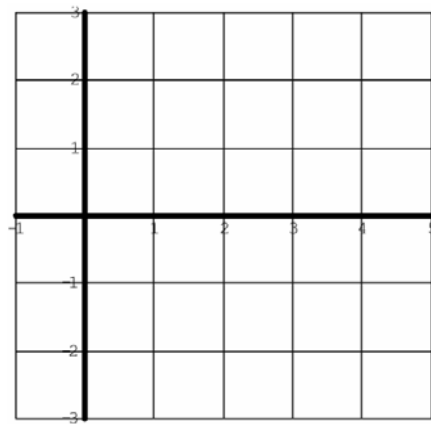
a) Find the intercepts of the conic section

b) Sketch a clearly labeled graph



18. The conic $x^2 + y^2 = 1$ is translated 2 units to the right

a) Write the equation of the new conic and sketch it



b) State the domain of the new conic

c) State the range of the new conic