Tutorial 3 (week 3)

Exercise 10.1

In Exercise 1-8, match the equation with one of the conic sections labelled (a)-(h). If the conic is a parabola, find its vertex, focus and directrix. If it is an ellipse or a hyperbola, find its vertices, foci and eccentricity.

1. $x^2 = -4y$

3. $y^2 = 8x$

2. $y = \frac{x^2}{8}$

4. $x = -\frac{1}{4}y^2$

In Exercise 9-14, find the vertex, focus, and directrix of the parabola with the given equation, and sketch the parabola.

9. $y = 2x^2$

13. $5y^2 = 12x$

In Exercise 27-30, find an equation of the parabola that satisfies the conditions.

27. Focus (3, 0), directrix $x = -3$

29. Focus ($-\frac{5}{2}$, 0), directrix $x = \frac{5}{2}$