Homework

Any Way You Slice It

1. Convert the following distance descriptions into equations in x and y. What kind of conic sections are they?

a) The set of points 5 units away from the point (-3, 2).

b) The set of points equidistant from both (2, 1) and the line y = 5.

c) The set of points whose distances from (0, 0) and (0, 3) sum to 5.

2. Convert the following equations into descriptions using distance. What kind of conic sections are they?

a) \( \frac{y^2}{49} - \frac{x^2}{576} = 1 \)

b) \( y = (x+1)^2 + 1 \)

\* You do not need to find the foci, just discuss how you would find them or if they exist.

c) \( \frac{x^2}{36} + \frac{y^2}{4} = 1 \)

3. To the right is an ellipsoid with the equation shown. How might you describe this using distance.\*