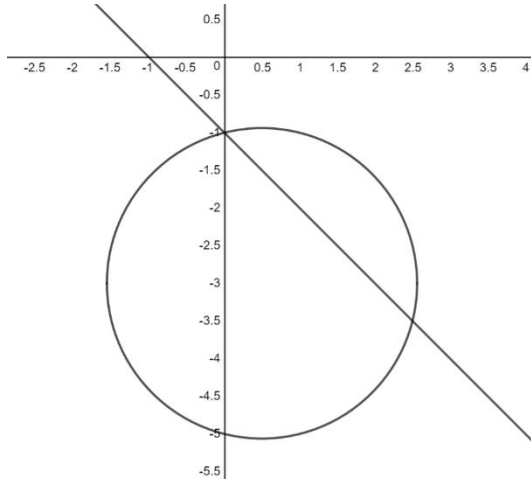Name: _____

PRACTICE Quiz (12.5-12.6)

1. **(7 points)** Find the partial fraction decomposition of the rational function:

$$f(x) = \frac{x+4}{x^4 + 4x^2}$$

2. **(7 points)** Consider the system of nonlinear equations:
$$\begin{cases} x + y + 1 = 0 \\ x^2 + y^2 + 6y - x = -5 \end{cases}$$

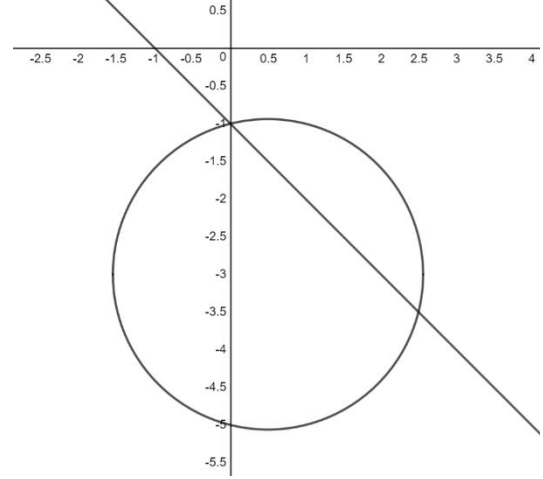(a) Use the graph of the equations below to estimate the real solution(s).

(b) Algebraically solve the system of equations given above. Keep solutions as fractions, not decimals. **No points will be awarded if the solutions is found through trial and error.**

---

3. **(7 points)** Consider the system of nonlinear equations:
$$\begin{cases} x + y + 1 = 0 \\ x^2 + y^2 + 6y - x = -5 \end{cases}$$

(a) Use the graph of the equations below to estimate the real solution(s).

(b) Algebraically solve the system of equations given above. Keep solutions as fractions, not decimals. **No points will be awarded if the solutions is found through trial and error.**