Precalc BC2D Squares and RootsName:

- 1. Given v = (-1, 1), find $\frac{1}{v}$ in two ways:
 - a. Geometrically on the grid.
- b. Convert to polar form, manipulate, and convert back to rectangular form. Compare, the answer should have rational coordinates.



2. Perform the following operations geometrically.



- 3. Given a = (-5, -12), calculate a^2 two different ways:
 - a. Convert to polar, square, convert back to rectangular.

b. Calculate directly in rectangular form.

- 4. Given a = (-3, 4), find \sqrt{a} in two ways:
 - a. Geometrically on the grid (the answer should have integral coordinates).
 - b. Convert to polar form, manipulate, and convert back to rectangular form. Compare.



- c. Are there two roots? How are they related?
- d. Confirm, by multiplying in rectangular form, that both your answers, squared, yield *a*.