

Introduction to Rays

A ray is geometric object, which is essentially a line that only goes in one direction:



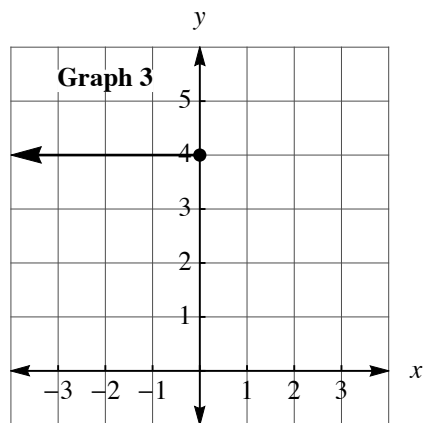
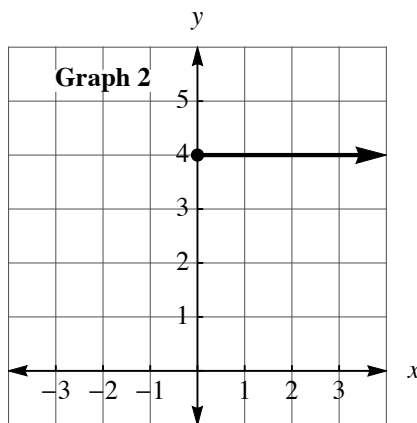
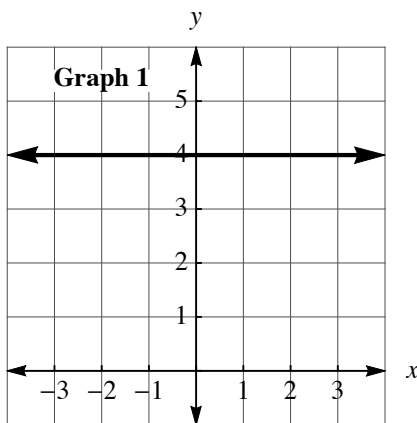
Notice how a ray has an “end-point”, which in this case is shown as a closed circle.

Similar to lines, we can graph rays on a coordinate plane.

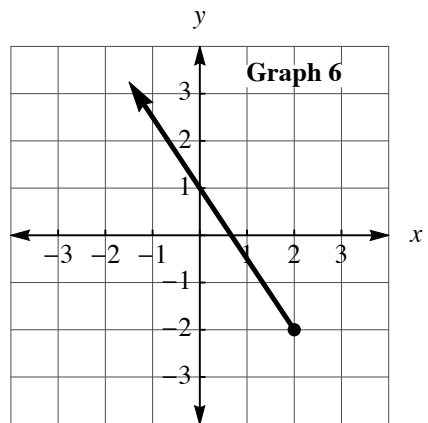
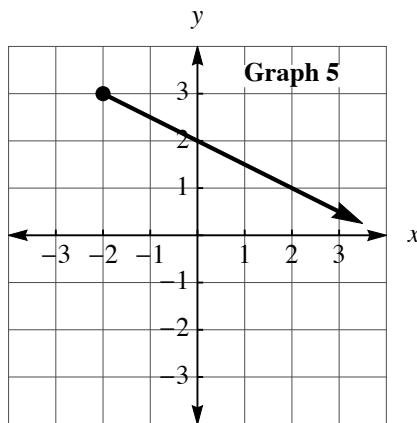
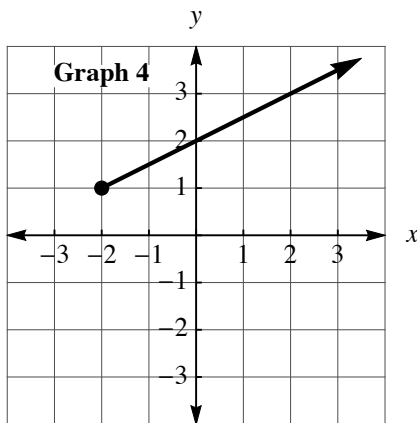
In Graph 1 (shown below) the line $y = 2$ is graphed (which of course is a horizontal line with a y -intercept of 2 and which extends indefinitely in both directions).

In Graph 2, a ray that has an end-point on the y -axis and extends indefinitely in the positive x direction is shown.

In Graph 3, a ray that has an end-point on the y -axis and extends indefinitely in the negative x direction is shown.



Of course, a ray can have a slope, just like a line can. The graphs below show a few examples.



From these graphs, it should be clear that a ray is very similar to a line, except the domain of a ray (and its range) is different from that of a line. In the next set of notes we will use this observation to come up with a way of describing a ray with an equation.