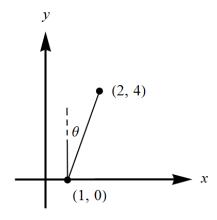
Exercise 29

A ship at position (1,0) on a nautical chart (with north in the positive y direction) sights a rock at position (2,4). What is the vector joining the ship to the rock? What angle θ does this vector make with due north? (This is called the **bearing** of the rock from the ship.)

Solution



The vector joining the ship to the rock is

$$(2,4) - (1,0) = (1,4).$$

The angle is

$$\tan \theta = \frac{1}{4} \quad \rightarrow \quad \theta = \tan^{-1} \frac{1}{4} \approx 14.04^{\circ}.$$