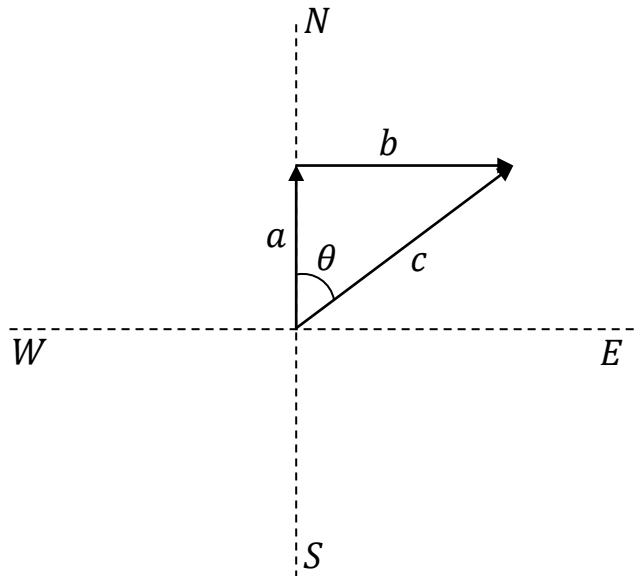


Answer on Question#56441 - Physics - Field Theory

A plane leaves the airport in Galisteo and flies $a = 170$ km at the north and then changes direction to fly $b = 250$ km at of east, after which it makes an immediate emergency landing in a pasture. When the airports sends out a rescue crew, in which direction and how far should this crew fly to go directly to this plane?

Solution:



The distance from the airport is

$$c = \sqrt{a^2 + b^2} = \sqrt{(170 \text{ km})^2 + (250 \text{ km})^2} = 302 \text{ km}$$

The angle θ is

$$\theta = \text{atan} \frac{b}{a} = \text{atan} \frac{25}{17} = 55.78^\circ$$

Answer: distance - 302 km, $\theta = 55.78^\circ$.