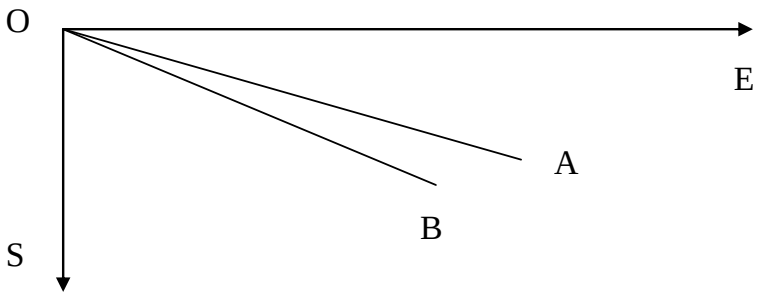

On the picture: OE shows East direction, A is a projection of a position of the first airplane and B is a projection of a position of the second airplane. $\angle AOE = 20°$, $\angle BOE = 25°$, $AO = 120$ and $BO = 110$.

Let we have 2 vectors – v_1 and v_2. v_1 is the vector from the origin (airport) to the first airplane and v_2 is the vector from the origin (airport) to the second airplane. We will use them in Cartesian 3-dimensional coordinates x, y and z. Let OE is x-axis, SO is y-axis and z-axis is directed upwards. Then we have:

$$v_1 = (x_1, y_1, z_1) = (120\cos 20°, 120\sin 20°, 2.5) = (112.76, 41, 2.5)$$

$$v_2 = (x_2, y_2, z_2) = (110\cos 25°, 110\sin 25°, 3.5) = (99.69, 46.49, 3.5)$$

The vector u from the first airplane to the second is:

$$u = v_2 - v_1 = (-13.07, 5.49, 1)$$

In terms of altitude, horizontal distance and bearing we have:

Altitude: 1000m

Horizontal distance: $d = \sqrt{(-13.07)^2 + 5.49^2} = 14.18$km

Bearing: $\phi = \text{atan}\frac{y}{x} = \text{atan}\left(\frac{5.49}{-13.07}\right) = -22.78° \approx -23°$ which means 23° to the south of west.