



Let the speed of the plane with respect to the ground is V .

The velocity of the plane with respect to the air is $V_r = 170.0$ m/s due east.

The velocity of the air with respect to the ground is $V_a = 46.0$ m/s at an angle of 30° west of due north.

$$V_x = V_{rx} + |V_{ax}| = 170.0 + 46.0 * \sin 30 = 170.0 + 23.0 = 193.0$$

$$V_y = V_{ry} + |V_{ay}| = 0.0 + 46.0 * \cos 30 = \text{approx. } 39.8$$

$$V = \sqrt{V_x^2 + V_y^2} = \text{approx. } 197.1$$

Answer: 197.1 m/s.