

Physics 10154 - Quiz 7A

Two alien spacecraft collide accidentally during a disastrous first-contact mission. They call in Earth investigators to reconstruct the collision and helpfully provide mks units for everything. The Ataran ship was moving at a rate of 31.0 m/s in the $+y$ direction. The Burfian ship was moving at an unknown speed in the $+x$ direction and is 2.00 times more massive than the Ataran ship.

After the collision, the two ships stuck together and moved off at an angle of 31.4° above the $+x$ direction. What was the initial speed of the Burfian ship?

