

# AP Wakeup

Assume the position:

In-between doing serious physics, Al enjoys playing a little football. He kicks the ball to Isaac (not pictured) who is waiting in anticipation 60 m downfield. Al kicks the ball with an initial velocity of 23 m/s, at an angle of  $40^\circ$  above the horizontal.

If Isaac catches the ball at chest height, 1.30 m above the ground, how far does Isaac have to run, and does he run toward Al or away from Al, in order to catch the ball?

