

Notes	
M1	Use of $\mathbf{I} = m\mathbf{v} - m\mathbf{u}$ in two dimensions. (i.e. resolving used) Dimensionally correct. Allow for a combined equation in vector format or for just one component. Condone sin/cos confusion. Allow if m seen but not substituted.
A1 A1	Equation for one component correct unsimplified Equations for both components correct unsimplified Allow A1A1 for a correct unsimplified vector equation Allow A marks if in terms of m and α
M1	Correct use of Pythagoras for their components to obtain the numerical value of the speed This may be seen or implied: an alert candidate might spot the 3, 4, 5 triangle.
A1	Correct only
Alt	
M1	Correct use of cosine rule in a dimensionally correct triangle. The lengths of the sides must be consistent, i.e. v , 2.8 and 6 or $\frac{1}{2}v$, 1.4 and 3 and it must be a correct vector triangle (vectors combined correctly)
A1 A1	Unsimplified equation with at most one error Correct unsimplified equation
M1	Substitute for trig. and solve for v
A1	Correct only