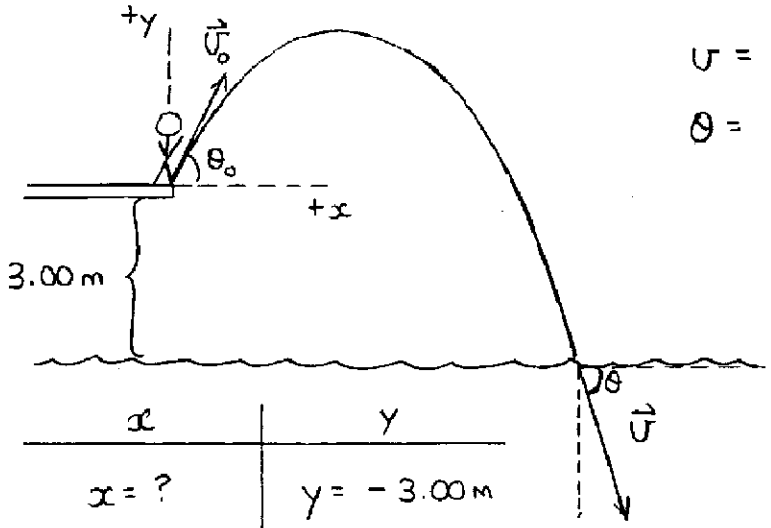
C1.



$v = 8.90$ m/s

$\theta = 75.0°$

x	y
$x = ?$	$y = -3.00$ m
$v_{ox} = v_x$	$v_{oy} = ?$
$v_x = v\cos\theta$	$v_y = -v\sin\theta$
$a_x = 0$	$a_y = -g = -9.80 m/s^2$

$v_{ox} = v_x = v\cos\theta = 8.90 m/s \cos 75.0° = 2.30 m/s$

$v_y = -v\sin\theta = -8.90 m/s \sin 75.0° = -8.60 m/s$

$v_y^2 = v_{oy}^2 + 2ay \Rightarrow v_{oy} = \sqrt{v_y^2 - 2ay}$

$v_{oy} = [(-8.60 m/s)^2 - 2(-9.80 m/s^2)(-3.00 m)]^{1/2} = 3.89 m/s$

$v_o = \sqrt{v_{ox}^2 + v_{oy}^2} = [(2.30 m/s)^2 + (3.89 m/s)^2]^{1/2} = 4.52 m/s$

$\theta_o = \arctan\left(\frac{v_{oy}}{v_{ox}}\right) = \arctan\left(\frac{3.89 m/s}{2.30 m/s}\right) = 59.4°$