3-2)
Pick the origin to be the point at which the boulder leaves the top. Up is positive y and 'to the right is positive x. Time t = 0 is when the leaves the top.

v_i = 7 m/s
$\theta_i = -40^o$

$x_i = 0$
xf = ?
$v_{ix} = v_i \cos\theta_i = 7*(0.766) = 5.36$ m/s
v_{fx} = ?
$a_x = 0$ (influence of only gravity)

t = ?

$y_i = 0$
$y_f = -14$ m
$v_{iy} = v_i \sin\theta_i = 7*(-0.643) = -4.50$ m/s
vfy = ?
$a_y = -9.8$ m/s^2 (influence of only gravity)

a)
$y_f = y_i + v_{iy}t + {}^1/_2 a_y t^2$
$-14 = 0 + (-4.5)t + (-4.9)t^2$
$4.9t^2 + 4.5t - 14 = 0$
$t = [-(4.5) \pm [(4.5)^2 - 4*4.9*(-14)^{1/2}]/(2*4.9) = 1.29$ seconds (We want the positive root, because the boulder hits the ground in the future)

$x_f = x_i + v_{ix}t + {}^1/_2 a_x t^2 = 0 + 5.36t + 0 = 5.36*1.29 =$ **6.93 m**

b)
If the x_f from Part a were less than 4m, then the answer would have been no.
Since it's greater than 4m, we need to see whether the boulder passes over the man's head.

What is y when x = 4m?
Find the time first:
$x_f = 4 = 5.36t$ t = 4/5.36 = 0.75 sec
Now y:
$y_f = y_i + v_{iy}t + {}^1/_2 a_y t^2 = 0 + (-4.5)(0.75) + (-4.9)(0.75)^2 = -6.13$ m or 7.87 m above the ground.
Since the man is only 1.9 m tall, he escapes being hit.

Alternatively, we might have found the x location for which the bolder is 1.9 m above the ground; if this were less than 4m, the man would have been hit.