

PHYS 907

HW #4

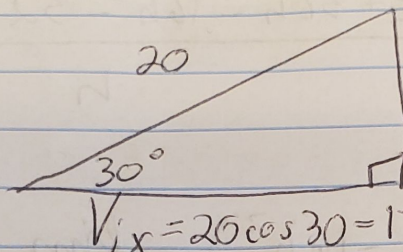
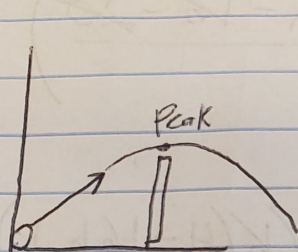
1. $V_i = 20 \text{ m/s}$ $\theta = 20^\circ$ $y_f = 2 \text{ m}$ $a_y = -9.8 \text{ m/s}^2$
 $y_i = 0 \text{ m}$ $x_i = 0 \text{ m}$ $V_{ix} = 20 \cos 20$ $V_{iy} = 20 \sin 20$

$y_f = \cancel{2} = -4.9t^2 + 6.84t + 0$

$t = 0.98$

$\cancel{x_f} = 18.79(0.98) = \boxed{18.41 \text{ m}}$

2.



$V_{iy} = 20 \sin 30 = 10$

$V_{ix} = 20 \cos 30 = 17.32$

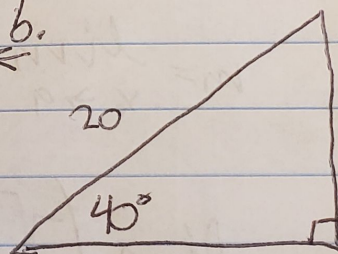
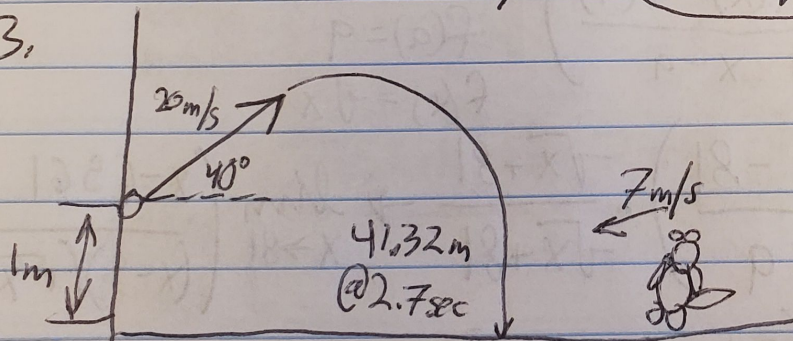
$t = 2.04$

$\cancel{-4.9t^2 + 10t + 0}$
 $y(t/2) = \boxed{5.1 \text{ m}}$ ←

$17.32(2.04) = 35.33 \text{ m}$

$\cancel{35.33/2} = \boxed{17.67 \text{ m}}$ ←

3.



$V_{iy} = 20 \sin 40 = 12.86$

$V_{ix} = 20 \cos 40 = 15.32$

$y_f = 0 = -4.9t^2 + 12.86t + 1, t = 2.7 \text{ seconds}$

$15.32(2.7) = 41.36 \text{ m}$

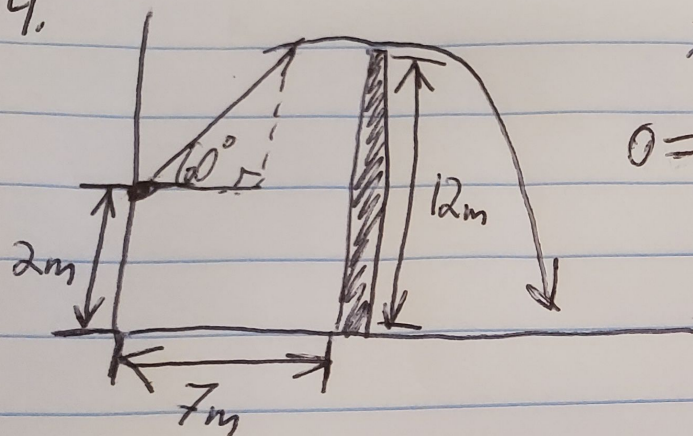
$\cancel{7} \cdot 2.7 = 18.9 \text{ m}$

$18.9 + 41.32 = \boxed{60.22 \text{ m}}$

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HW #4

4.



$$\cancel{x_f = 0} \quad x_f = \cancel{(V_i \cos 60)} \cdot t$$

$$0 = y_f = -4.9t^2 + (V_i \sin 60)t + 2$$

$$\cancel{y_f} = \frac{1}{2}at^2 + V_{iy}t + y_i$$

I don't know

1 2 3 4 5 6

180
111
60 90 30 2

45
111
30 30 5

9

9

1+2+6

1+4
or
2+3

16

6+5+4+1

3- 5	2	3- 4	9+ 6	1	45x 3
2- 4	180x 6	1	2	3	5
2	5	3	5+ 1	24x 6	4
2÷ 6	3	2	4	1- 5	1
2- 3	1	16+ 6	5	4	3- 2
1	4	5	1- 3	2	6