PHYS 407

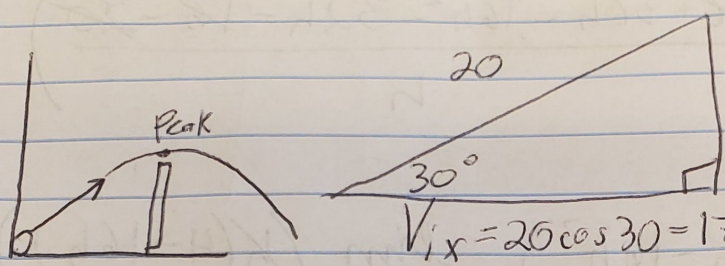
HW #4

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

$y_f = 2 = -4.9t^2 + 6.84t + 0$

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

2.



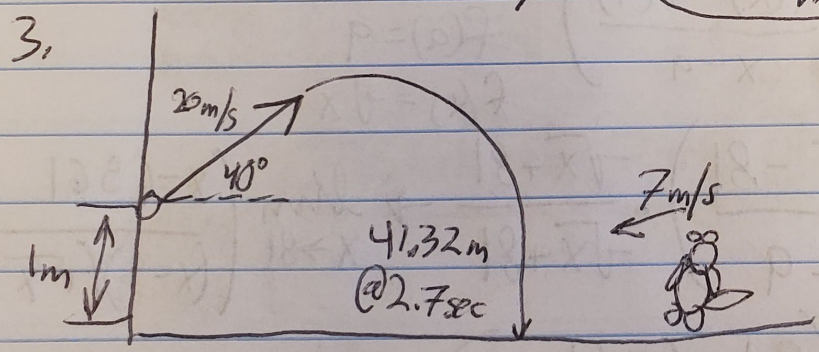
$t = 2.04$ $-4.9t^2 + 10t + 0$

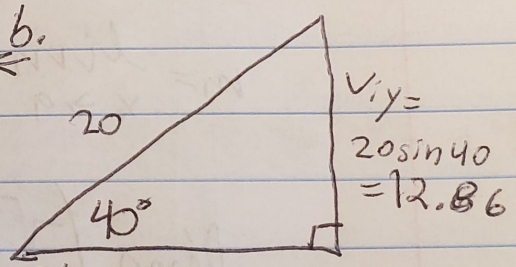
$y(t/2) = \boxed{5.1m}$ a.

$17.32(2.04) = 35.33m$

$35.33/2 = \boxed{17.67m}$ b.

3.





$y_f = 0 = -4.9t^2 + 12.86t + 1$, $t = 2.7$ seconds

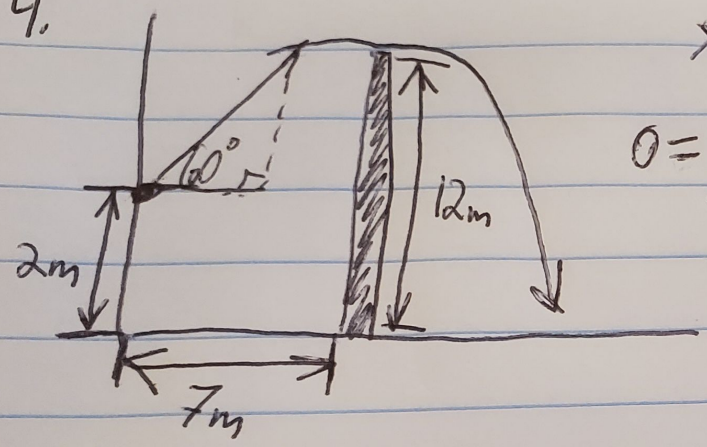
$15.32(2.7) = 41.36m$

$7 \cdot 2.7 = 18.9m$ $18.9 + 41.32 = \boxed{60.22m}$

PHYS 407

HW #4

4.



~~$x_f = 0 = (V_i \cos 60)\cdot t$~~ $x_f = (V_i \cos 60)\cdot t$

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

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

I don't know

1, 2, 3, 4, 5, 6

180
/ | | \
6 · 5 · 3 · 2

45
/ | |
3 · 3 · 5

9

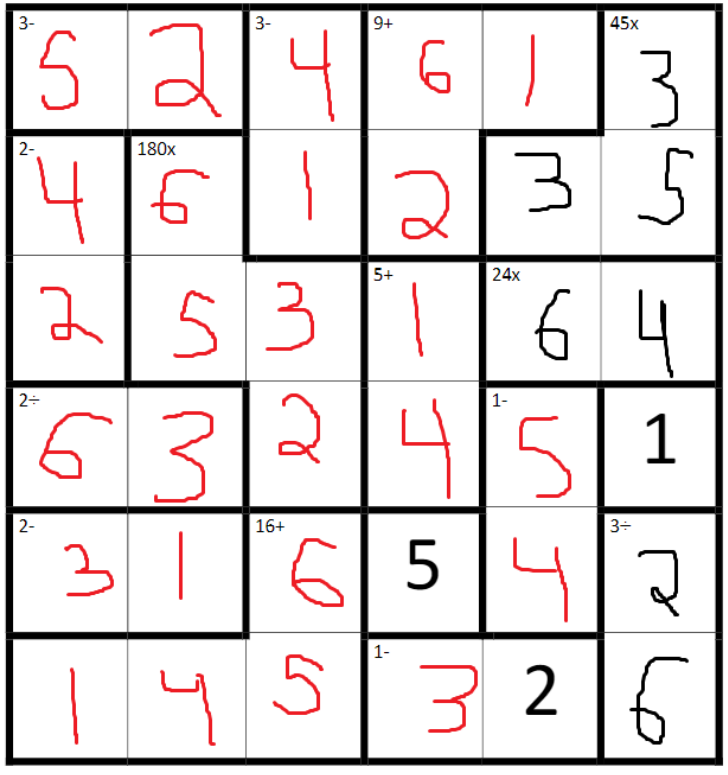
1+2+6

9

1+4
or
2+3

16

6+5+4+1


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