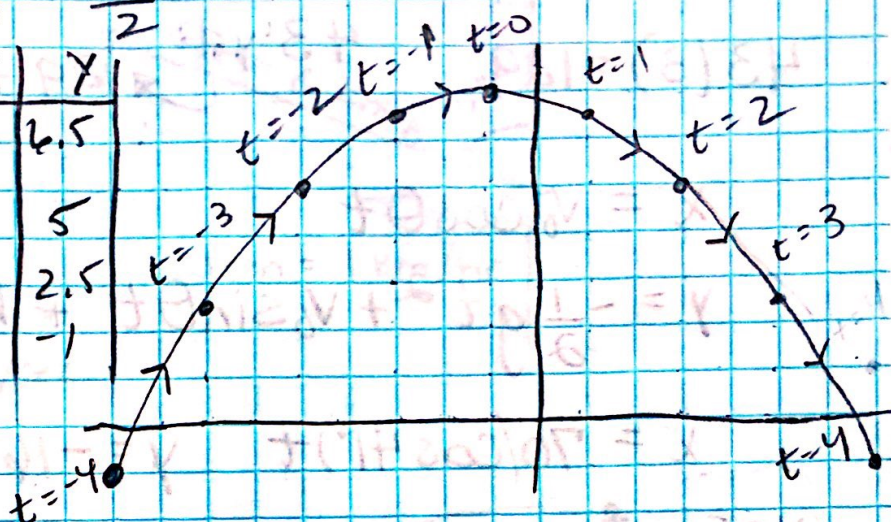


HW #58 p. 469

5. $x = 2t - 1$ $y = -\frac{t^2}{2} + 7$ $-4 \leq t \leq 4$

t	x	y
-4	-9	-1
-3	-7	2.5
-2	-5	5
-1	-3	6.5
0	-1	7

t	x	y
1	1	6.5
2	3	5
3	5	2.5
4	7	-1



16. $x = \frac{t}{3} + 2$ $y = \frac{t^2}{6} - 7$

$3(x - 2) = t$

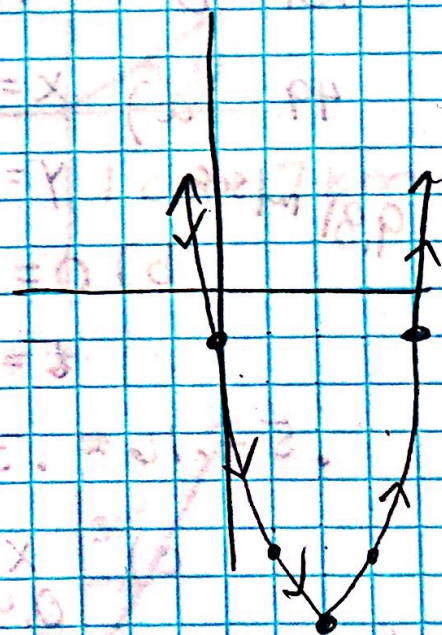
$3x - 6 = t$

$y = \frac{(3x - 6)^2}{6} - 7$

$y = \frac{9x^2 - 36x + 36}{6} - 7$

$y = \frac{3}{2}x^2 - 6x + 6 - 7$

$y = \frac{3}{2}x^2 - 6x - 1$

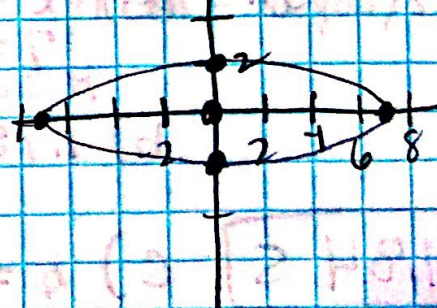


19. $x = 7 \sin \theta$ $y = 2 \cos \theta$

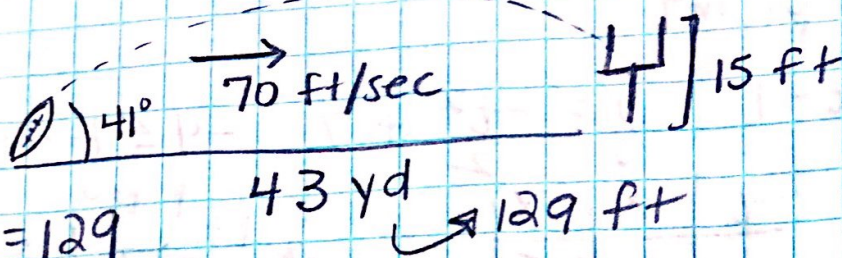
$\left(\frac{x}{7}\right)^2 + \left(\frac{y}{2}\right)^2 = 1$

$\frac{x^2}{49} + \frac{y^2}{4} = 1$

$a = 7$
 $b = 2$
 $C(0, 0)$



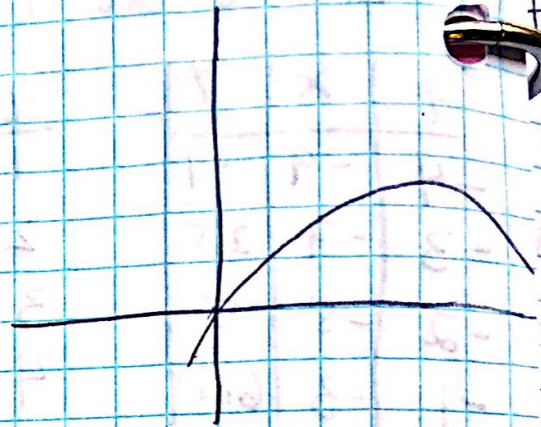
33.



$43(3) = 129$

$x = v_0 \cos \theta t$

$y = -\frac{1}{2} g t^2 + v_0 \sin \theta t + h_0$



$x = 70(\cos 41^\circ)t$ $y = -16t^2 + 70(\sin 41^\circ)t$

yes

$x \approx 131.55 > 129$ $y = 15$ $x = 2.49$
 $x = 2.49(70) \cos 41^\circ$

45. b 46. d 47. a 48. c

49. a) $x = 0.75 t \cos 45^\circ$

9.81 m/sec

$y = -4.9t^2 + 0.75 t \sin 45^\circ + 0.3$

b) $0 = -4.9t^2 + 0.75 t \sin 45^\circ + 0.3$

c) $t = .3074 \text{ sec} \rightarrow x = (.3074) \cdot 75 \cos 45^\circ$

$.5 - .16 \approx .34 \text{ m from the base}$ NO

c) $x = t \cdot v_0 \cos \theta$

$0.4 = .38 \cdot v_0 \cos 45^\circ$ 1.49 m/sec

51.

a) $1.49 = v_0 x$

51.

a) $x = t \cdot v_0 \cos \theta$

$7 = (.4) \cdot v_0 \cos 50^\circ$

$v_0 = 27.2 \text{ ft/sec}$

b) $1.75 = t(27.2) \cos 50^\circ$

$t = 1$

about 1 sec

1.84 s

c) $y = -16t^2 + 8t \sin 75^\circ + 4.75$ $t = .84$

$t = .34 =$