7.3 Foundations of Math 11

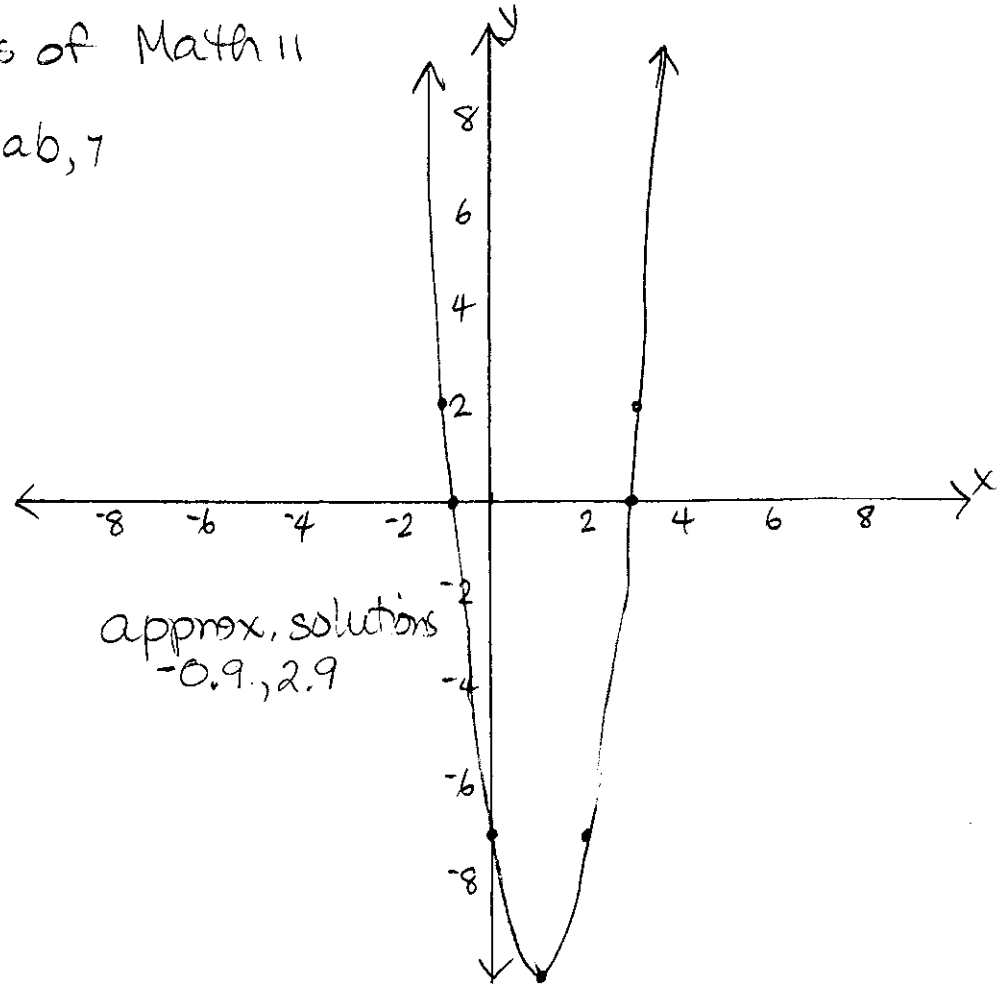
p. 380 # 5ab, 6ab, 7

5. a) $3x^2 - 6x - 7 = 0$

$3x^2 - 6x - 7 = y$

x	y
0	-7
1	-10
2	-7
3	2
4	17

Use symmetry for more points



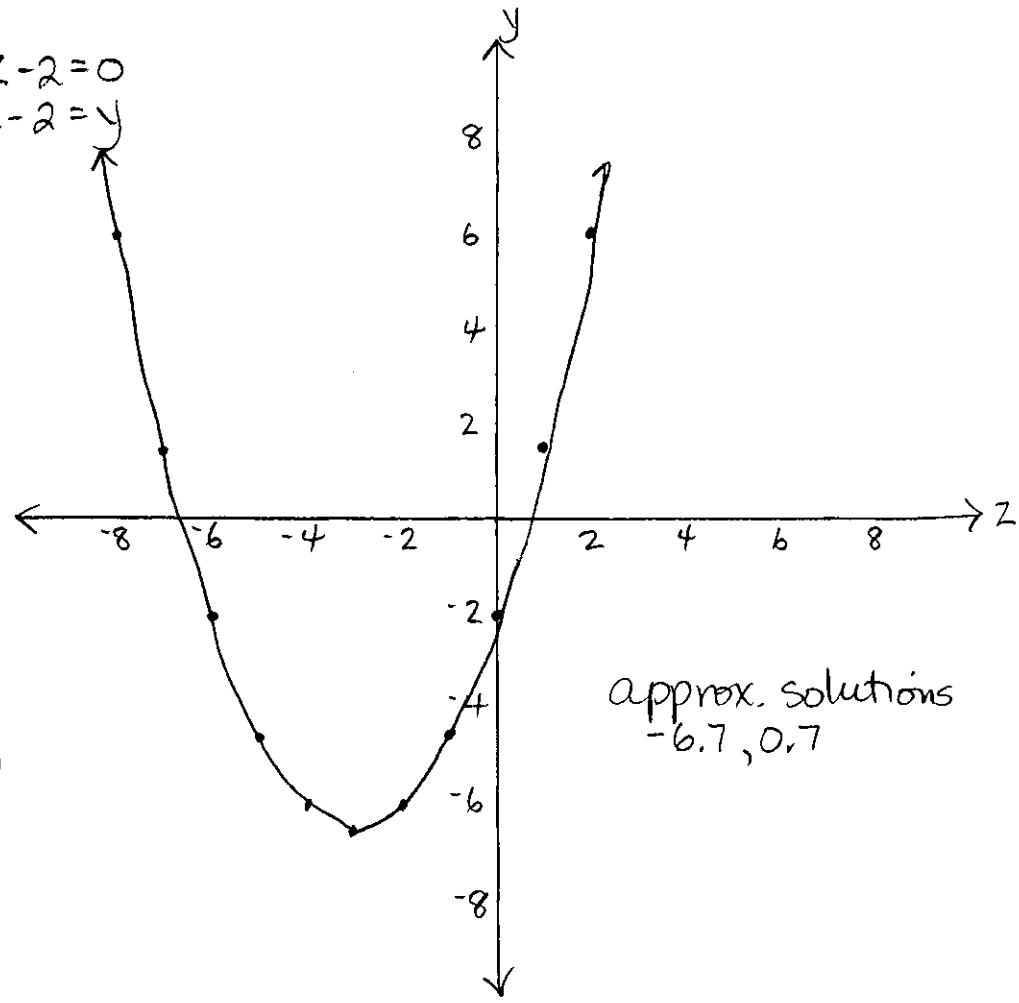
approx. solutions
-0.9, 2.9

b) $0.5z^2 + 3z - 2 = 0$

$0.5z^2 + 3z - 2 = y$

z	y
0	-2
1	1.5
2	6
3	11.5
-1	-4.5
-2	-6
-3	-6.5
-4	-6

Use symmetry for more points



approx. solutions
-6.7, 0.7

p. 380 cont.

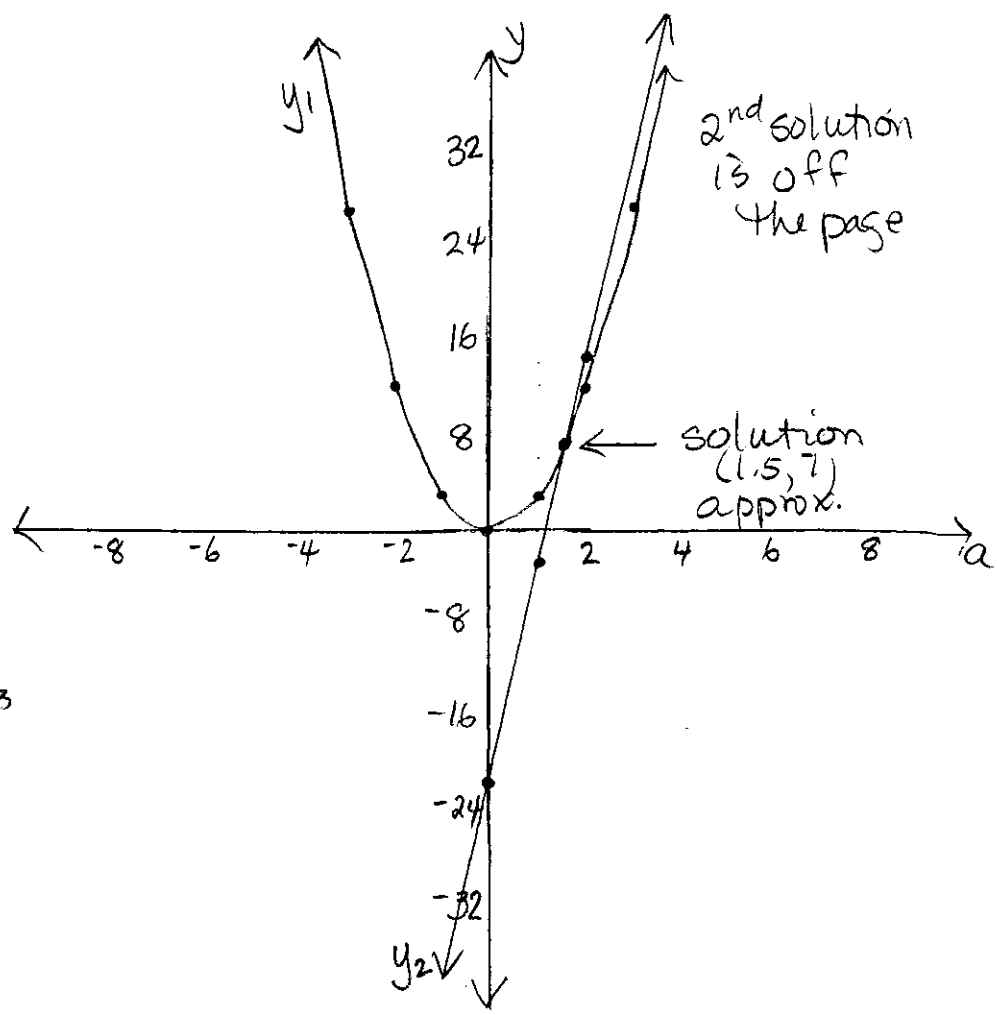
6. a) $3a^2 = 18a - 21$

$y_1 = 3a^2$

a	y
0	0
1	3
2	12
3	27

Use symmetry for more points

$y_2 = 18a - 21$

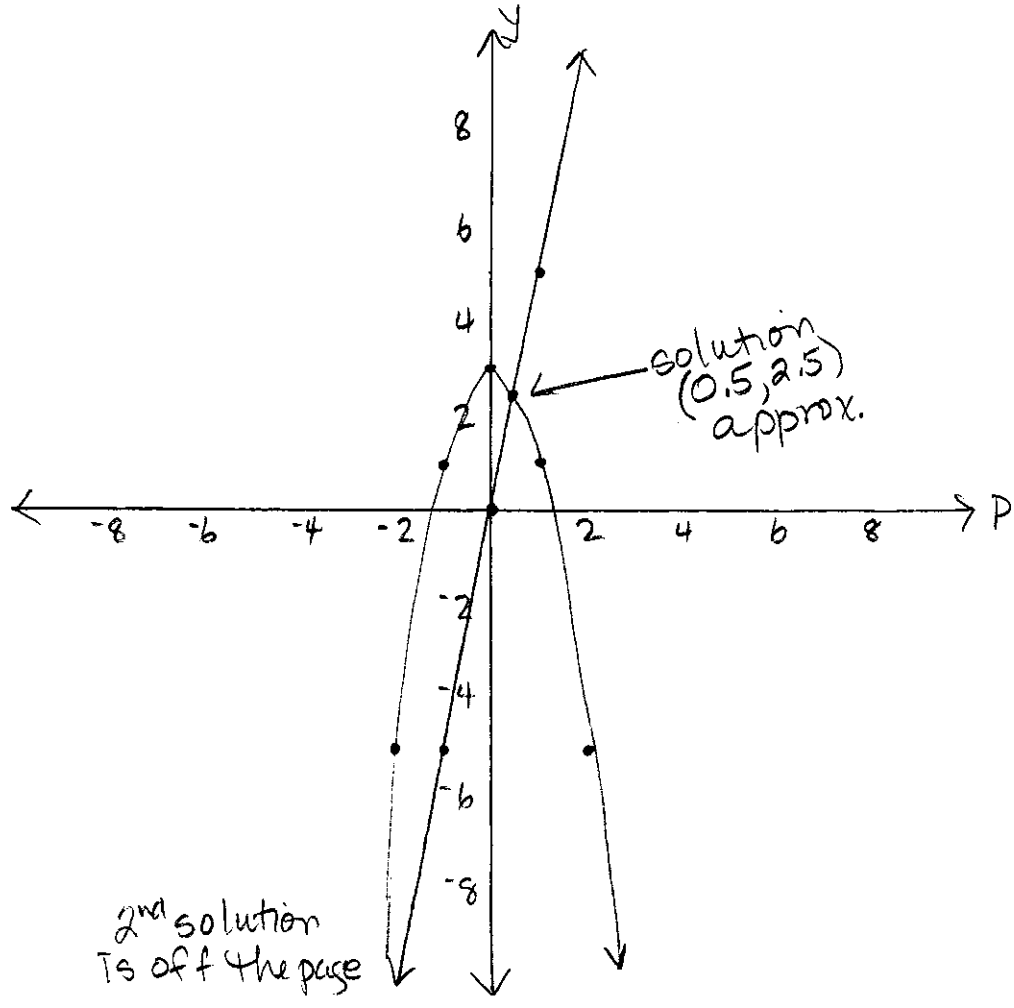


b) $5p = 3 - 2p^2$

$y_1 = 5p$

$y_2 = 3 - 2p^2$

p	y
0	3
1	1
2	-5
3	-15
-1	1
-2	-5
-3	-15



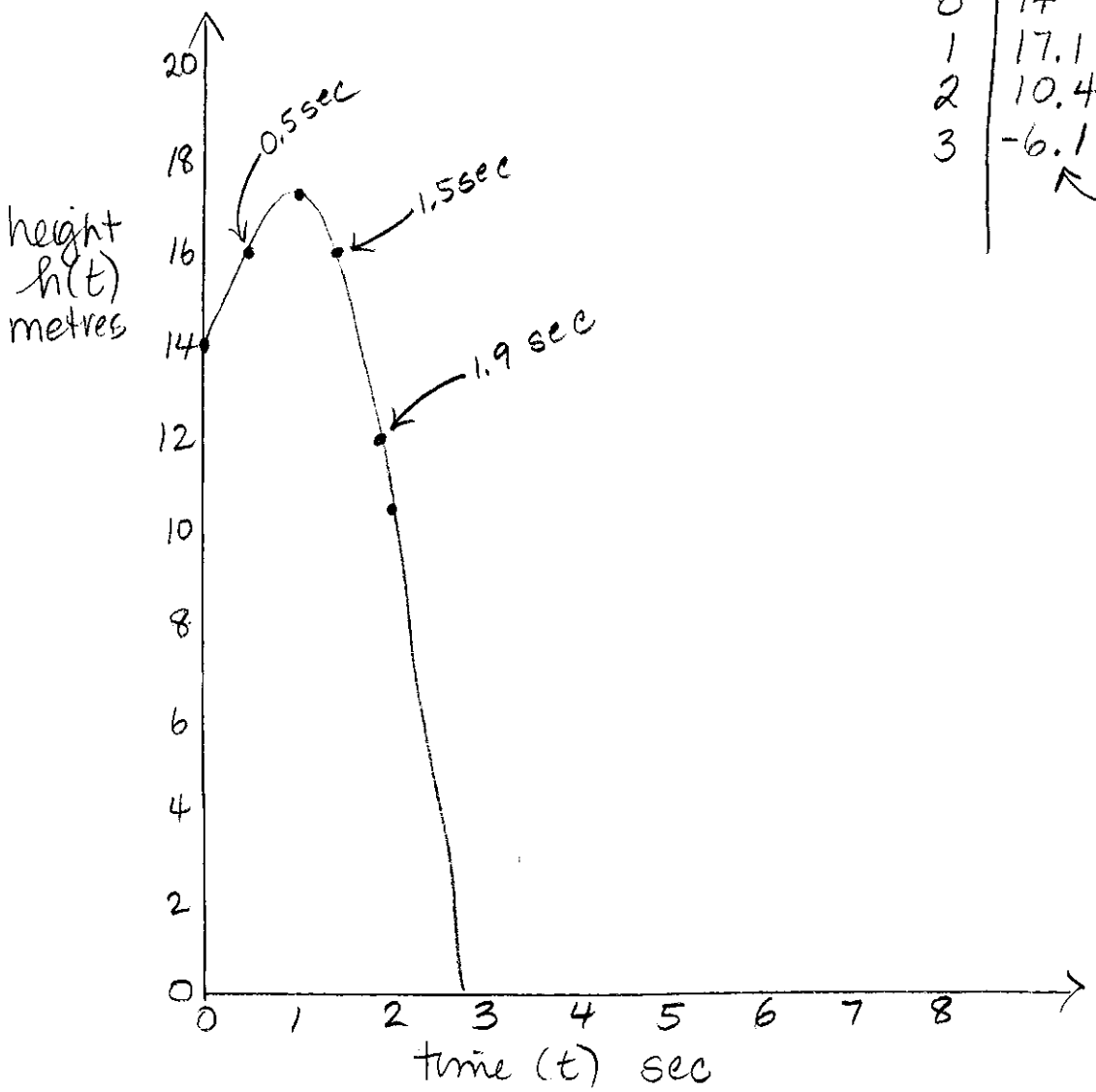
p. 380 cont.

7. $h(t) = -4.9t^2 + 8t + 14$

t	$h(t)$
0	14
1	17.1
2	10.4
3	-6.1

Use only positive values for time

stop because height can't be negative



a) The ball is 16 m above water at about 0.5 and 1.5 sec.

b) The ball is 12 m above water at about 1.9 sec.

c) The ball is never above 18 m because the vertex is 17.1 m.

d) The ball hits the water at about 2.7 sec.