10-21-13

7.3 (7.), (13), 21, (37.)

Example 2 and 4 read

Example 5, 6, 7 (read)

7.4

example	problems
1	3
2	3
3	mixtures (17, 19, 21, 23, 25, 26, 27, 29, 31, 35)
4	see mixtures
5	

7.5

example	problem
1	13, 15, 17
2	35
3	31, 27
4	31, 27
5	

2, 3

(20)

$2 \cdot \left[x - \frac{3}{2}y = 13 \right]$ (A)

$2 \cdot \left[\frac{3}{2}x - y = 17 \right]$ (B)

→ new (A) $2x - 3y = 26$

[new (B) $3x - 2y = 34$] ←

$3 \cdot$ [(A)' $2x - 3y = 26$]

$2 \cdot$ [(B)' $3x - 2y = 34$]

$6x - 9y = 78$ (A)'' ←

$-9y - (-4y)$

$= -9y + 4y$ — [$6x - 4y = 68$ (B)'' ←]

$= -5y$

$0 - 5y = 10$

$-5y = 10 \Rightarrow y = -2$

$\Rightarrow x - \frac{3}{2} \cdot y = 13 \Rightarrow x - \frac{3}{2} \cdot (-2) = 13 \Rightarrow \boxed{x = 10}$

BC solution:

$(10, -2)$

TRY (57) of mine. TRY NOW!

(57) $40\left[x + \frac{9}{2}y = \frac{15}{4}\right]$

$20\left[\frac{9}{10}x - y = \frac{9}{20}\right]$

$4x + 18y = 15$

$18x - 20y = 9$

$9 \cdot (4x + 18y = 15)$

$-2 \cdot (18x - 20y = 9)$

24.

(A) $36x + 162y = 135$

$-\left[(B)\ 36x - 40y = 18\right]$

$0 + 202y = 117$

$y = \frac{117}{202}$

$x + \frac{9}{2} \cdot \frac{117}{202} = \frac{15}{4}$

$x + \frac{1053}{404} = \frac{15}{4}$

$x = \frac{15}{4} - \frac{1053}{404}$; LCD = 404

$\begin{array}{r} 117 \\ \times\ 9 \\ \hline 1053 \end{array}$

24. $x = \frac{15}{4} \cdot \frac{101}{101} - \frac{1053}{404} \cdot \frac{1}{1}$

$x = \frac{1515}{404} - \frac{1053}{404}$ ✗✗

$x = \frac{462}{404} - \frac{231}{202}$

101
× 15
505
101
1515

1515
− 1053
462

solution = $\left(\frac{231}{202}, \frac{112}{202}\right)$

7.2

(21) $8x - 3y = -6$ (A)

$5x + 6y = 75$ (B)

Get rid of x:

$-8 \cdot$ (B) $= -8 \cdot (5x + 6y = -8 \cdot 75)$

$5 \cdot$ (A) $\Rightarrow 5 \cdot (8x - 3y) = 5 \cdot (-6)$

$-40x - 48y = -600$

$40x - 15y = -30$

$+ \quad (-40x - 48y = -600)$

$0 - 63y = -630$

$\frac{-63y}{-63} = \frac{-630}{-63}$

$y = +10$

$5x + 6 \cdot 10 = 75$ (B)

$5x + 60 = 75 \Rightarrow x = 3$

SOLUTION:

(3, 10)

2.3 (5)

$x + y = 6$ (A)

$-x + 3y = -2$ (B)

$0 + 4y = 4$

ADD TO eliminate x

$\frac{4y}{4} = \frac{4}{4}$

$y = 1$

(A) $x + y = 6$

$x + 1 = 6$

$x = 5$

(5, 1)

use (B)

$-x + 3y = -2$

$-x + 3(1) = -2$

$-x + 3 = -2$

$-3 \quad -3$

$-x = -5$

$-a = -5$

$a = 5$

$x =$

7.4

(3) basketball scores

TWO SHOT TYPES

2 pointer = x

3 pointer = y

$2x$ = points from 2 pointers

$3y$ = " " 3 " .

(A) shots: $x + y = 39$ (-2)

(B) points: $2x + 3y = 84$

$-2x - 2y = -78$

$2x + 3y = 84$

$y = 6$ (3-POINTERS)

(6) $\overset{2.3}{y = 6}$ (2 points)

$x + y = 39$

$x = 39 - y$

$x = 39 - 6$

$x = 33$ (2 points)

solution $= (33, 6)$

(7) (A) $x + y = 430$

(B) $5.x + 10.y = \boxed{2620}$ ¢

$x = 430 - y$

SUB INTO (B) $5.(430 - y) + 10y = 2620$

$2150 - 5y + 10y = 2620$

7.4

(7)

$2150 - 5y + 10y = 2620$ (B)

$2150 + 5y = 2620$

$5y = 470$

$\frac{5y}{5} = \frac{470}{5}$

$y = 94$ (10¢ coins)

$x = 430 - y$

$x = 330$ (5¢ coins)

(330, 94)

5¢ coins, 10¢ coins

2620
−2150
470

94
5)470
45
20

430
−94
336

7.4

(7.) $x + y = 300$ amt.

$19x + 22y = (300) \cdot 20$ money

$\frac{\$20}{kg} \cdot 300kg$

= money

= \$6000

$x + y = 300$ (A)

$19x + 22y = 6000$ (B)

$x = 300 - y$

$19(300 - y) + 22y = 6000$ prices stuff

$5700 - 19y + 22y = 6000$

$3y = 300 \Rightarrow y = 100$

2.4

(10)

$x = 300 - y$

$x = 200$ $(y = 100)$

cheap stuff

$6000 of $20/kg stuff

7.5

(17)

$x + y \leq 4$

$-x \quad -x$

$y \leq -x + 4$

(1) find line $y = mx + b$

(2) graph $y = mx + b$

(3) use test points to SHADE correct half.

$y = -x + 4$ (1), (2).

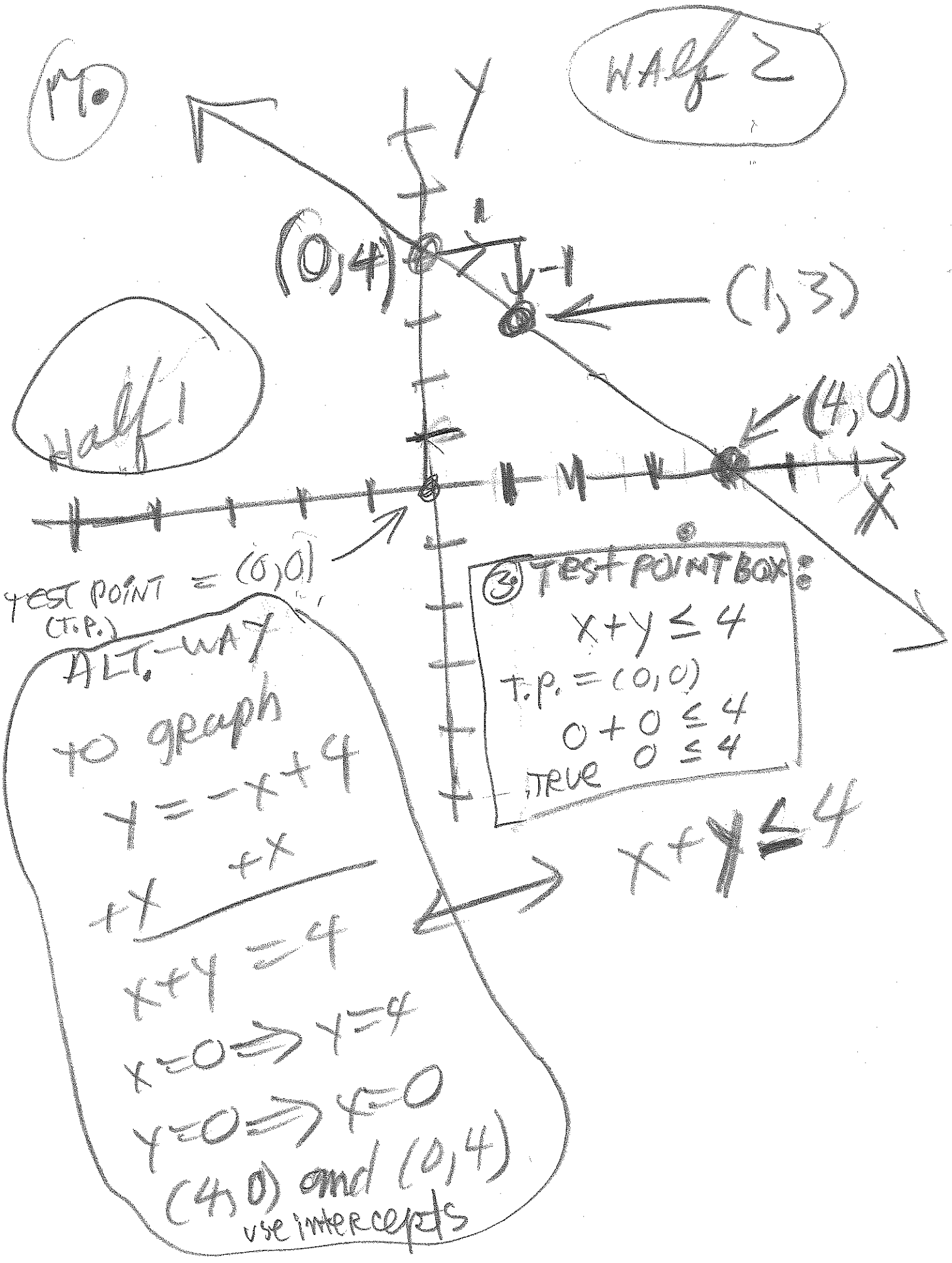
$y = mx + b$

$y = (-1)x + 4$

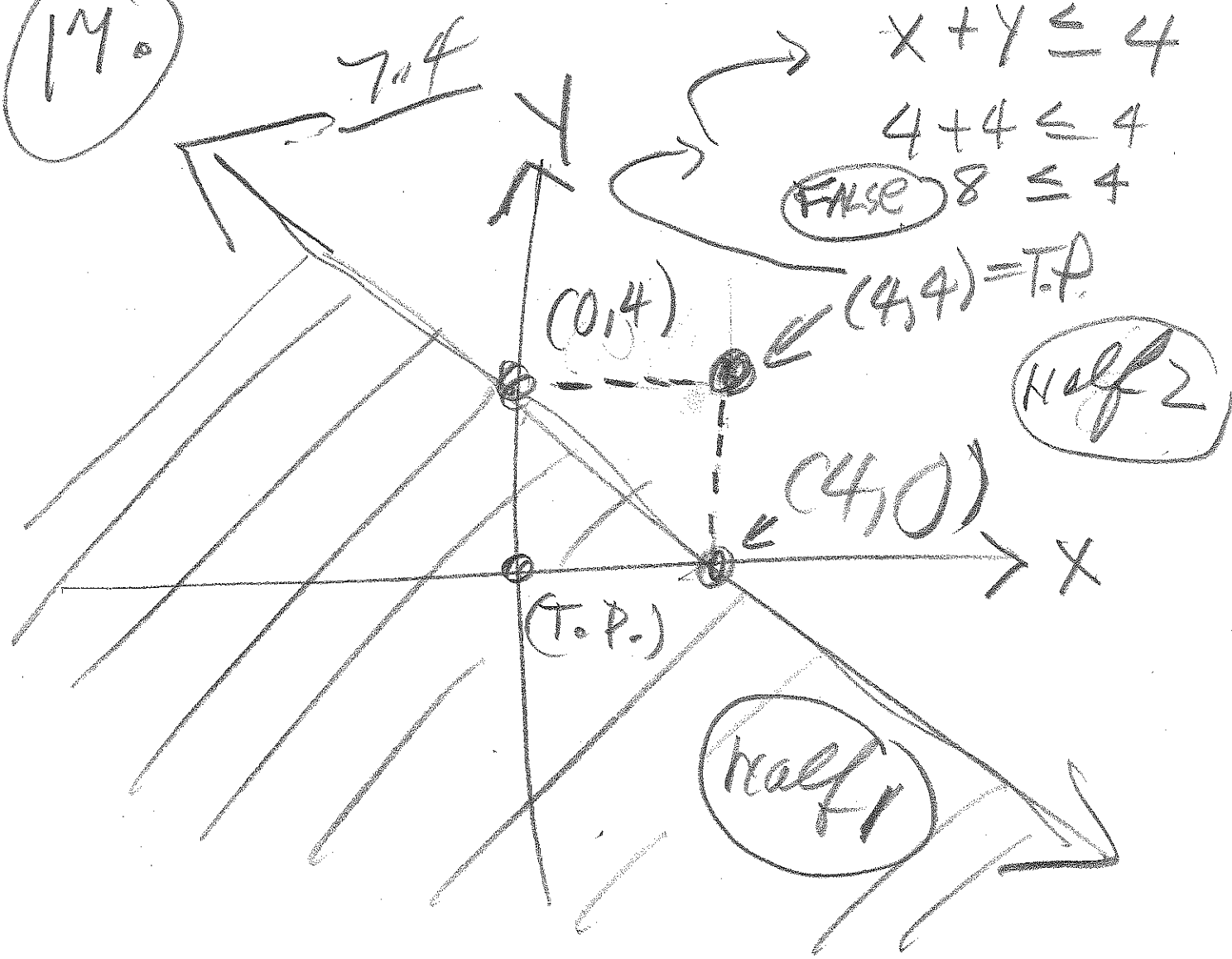
$y = -\frac{1}{1} \cdot x + 4$

$\text{slope} = \frac{-1}{1} = \frac{\text{RISE}}{\text{RUN}}$

$b = 4 \Rightarrow$ Y-INT $= (0, 4)$


Half 2
Half 1
y
x
(0,4)
(1,3)
(4,0)
TEST POINT = (0,0)
(T.P.)
ALT. WAY
to graph
y = -x + 4
+x +x
x + y = 4
x = 0 ⇒ y = 4
y = 0 ⇒ x = 0
(4,0) and (0,4)
use intercepts
③ TEST POINT BOX:
x + y ≤ 4
T.P. = (0,0)
0 + 0 ≤ 4
TRUE 0 ≤ 4
x + y ≤ 4

(14.)



$x + y \leq 4$ ↪ T.P. $\neq (0,0)$

↓

↑ solid

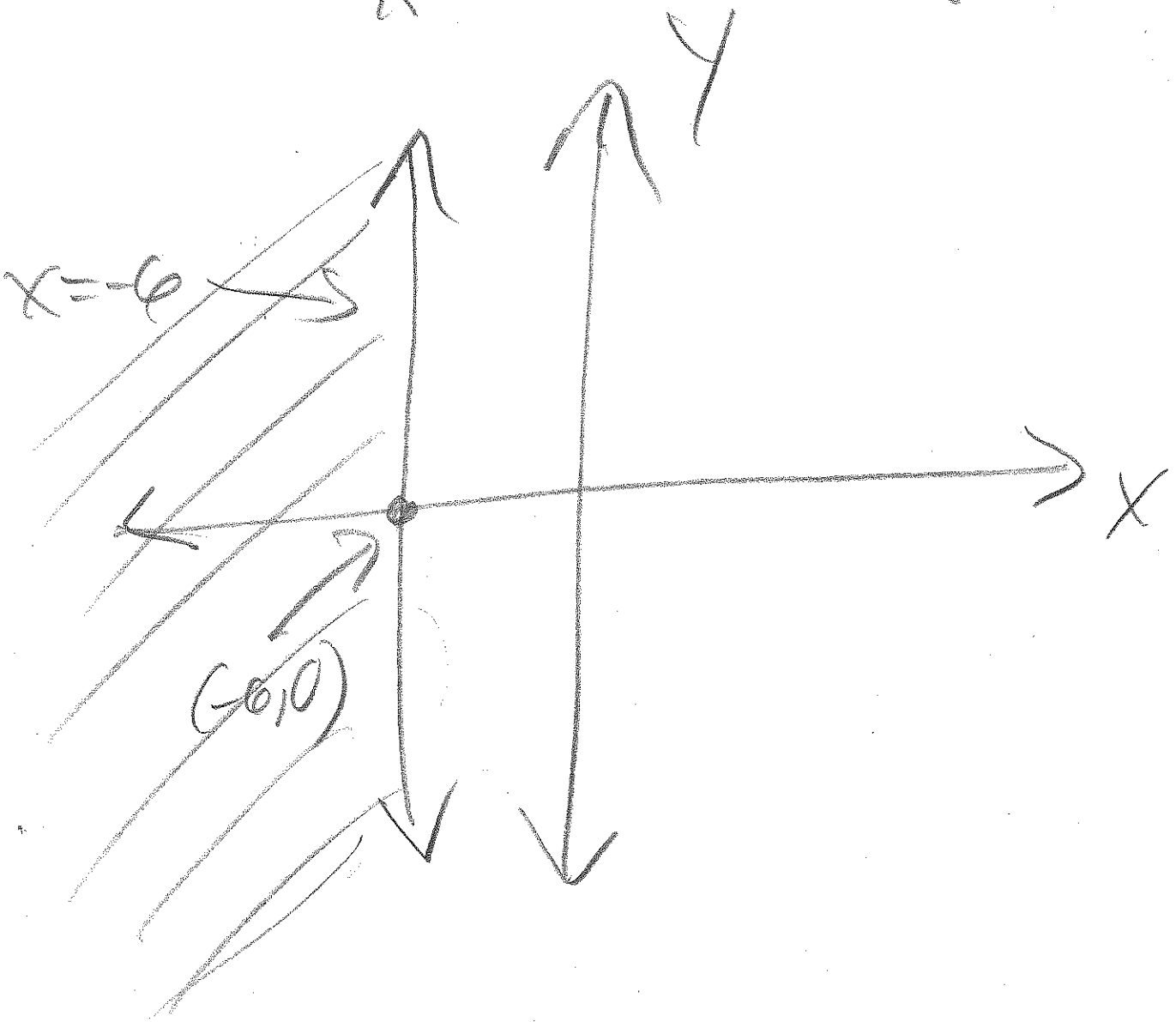
$0 + 0 \leq 4$

$0 \leq 4$ TRUE

Type I

7.5: TRY (≥ 0), (≤ 0)

$x \leq -6$ (vertical line)



Type II

TRY (27), (31)

$z = 5$

horizontal

$y \geq 7$