Here is a pattern made with toothpicks. The pattern continues.

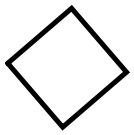


Figure 1

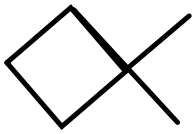


Figure 2

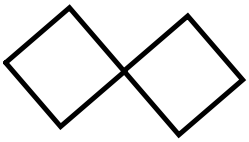


Figure 3

a) Create a table of values for the above pattern.

b) Write an equation that relates the number of toothpicks,t, to the figure number, f.

c) Use your equation to determine how many toothpicks would be in figure number 280?

d) Use your equation to determine which figure number has 134 toothpicks?

Here is a pattern made with toothpicks. The pattern continues.

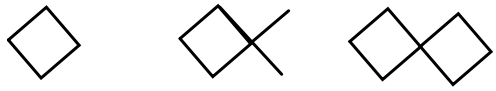


Figure 1 Figure 2 Figure 3

a) Create a table of values for the above pattern.

f	t
1	4
2	6
3	8

(+1) (+2) (+1) (+2)

$y = \frac{\Delta y}{\Delta x} x \pm \#$

b) Write an equation that relates the number of toothpicks,t, to the figure number, f.

$t = \frac{2}{1} f + 2$

c) Use your equation to determine how many toothpicks would be in figure number 280?

$t = 2f + 2$

$t = 2(280) + 2$

$t = 560 + 2$

$t = 562$

d) Use your equation to determine which figure number has 134 toothpicks?

$t = 2f + 2$

$134 = 2f + 2$ (-2 -2)

$\frac{132}{2} = \frac{2f}{2}$

$f = 66$

Create a table of values to graph the following equations.

hint: must use your equation to determine the change in your x values

$\frac{1}{3}x - \frac{3y}{7} = -3$ (21) (21) (21)

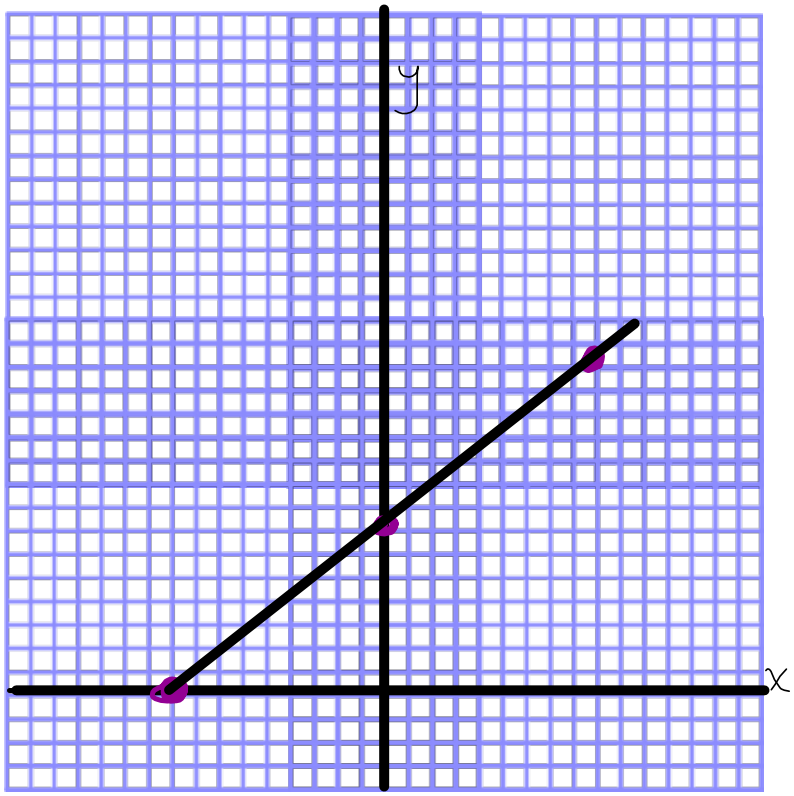
$7x - 9y = -63$

$\frac{-9y}{-9} = \frac{-7x}{-9} - \frac{63}{-9}$

$y = \frac{7}{9}x + 7$

$\Delta x = 9$

x	y
-9	0
0	7
9	14



$x = -9$

$y = \frac{7}{9}(-9) + 7$

$y = -7 + 7$

$y = 0$

$x = 0$

$y = \frac{7}{9}(0) + 7$

$y = 0 + 7$

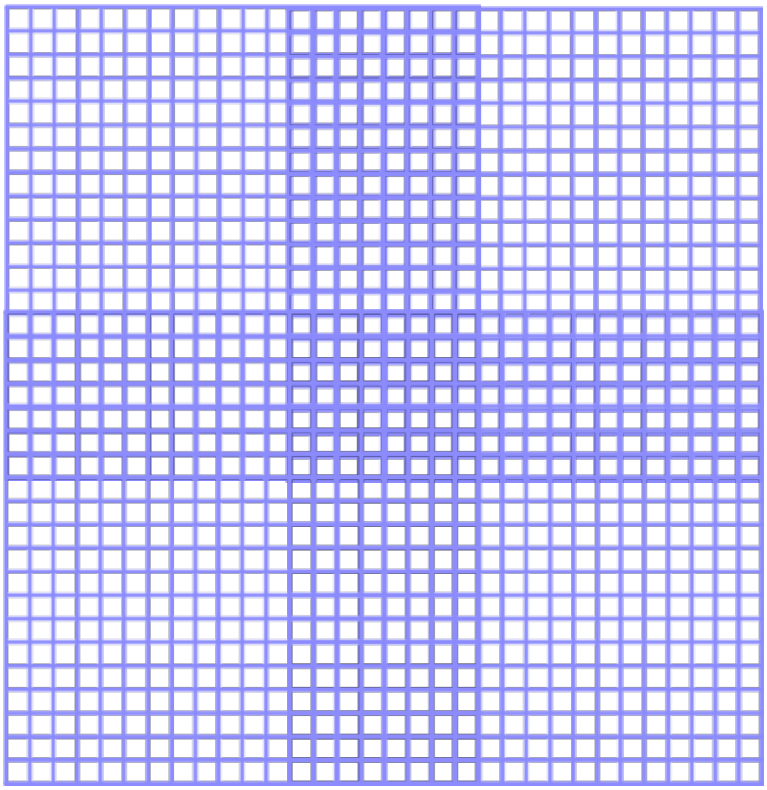
$y = 7$

Create a table of values to graph the following equations.

hint: must use your equation to determine the change in your x values

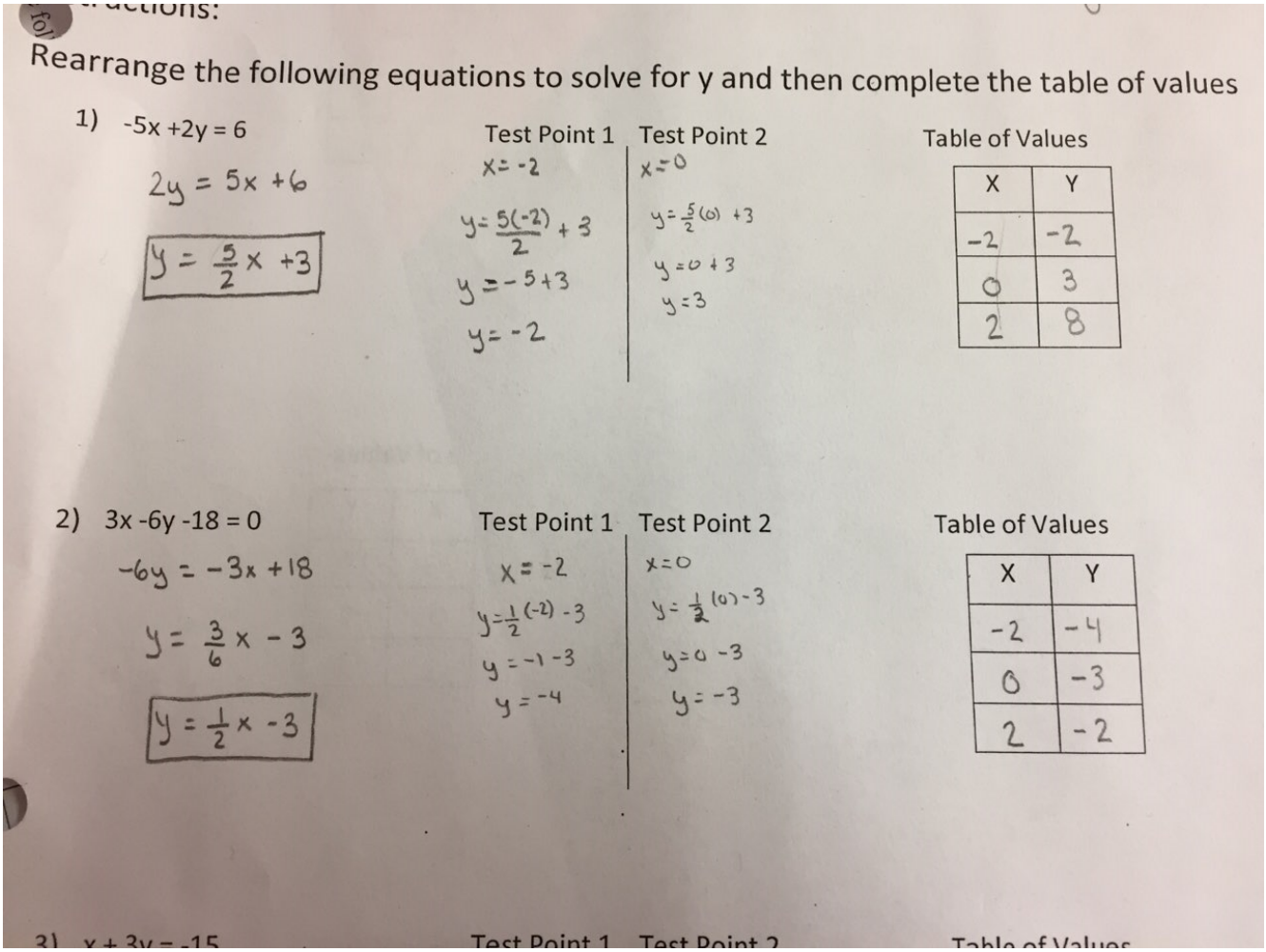
$\frac{1}{3}x - \frac{3y}{7} = -3$

x	y
–	
0	
–	



Worksheet

Questions 1 to 8



...uctions:

Rearrange the following equations to solve for y and then complete the table of values

1) $-5x + 2y = 6$

$2y = 5x + 6$

$\boxed{y = \frac{5}{2}x + 3}$

Test Point 1: $x = -2$

$y = \frac{5(-2)}{2} + 3$

$y = -5 + 3$

$y = -2$

Test Point 2: $x = 0$

$y = \frac{5}{2}(0) + 3$

$y = 0 + 3$

$y = 3$

Table of Values

X	Y
-2	-2
0	3
2	8

2) $3x - 6y - 18 = 0$

$-6y = -3x + 18$

$y = \frac{3}{6}x - 3$

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

Test Point 1: $x = -2$

$y = \frac{1}{2}(-2) - 3$

$y = -1 - 3$

$y = -4$

Test Point 2: $x = 0$

$y = \frac{1}{2}(0) - 3$

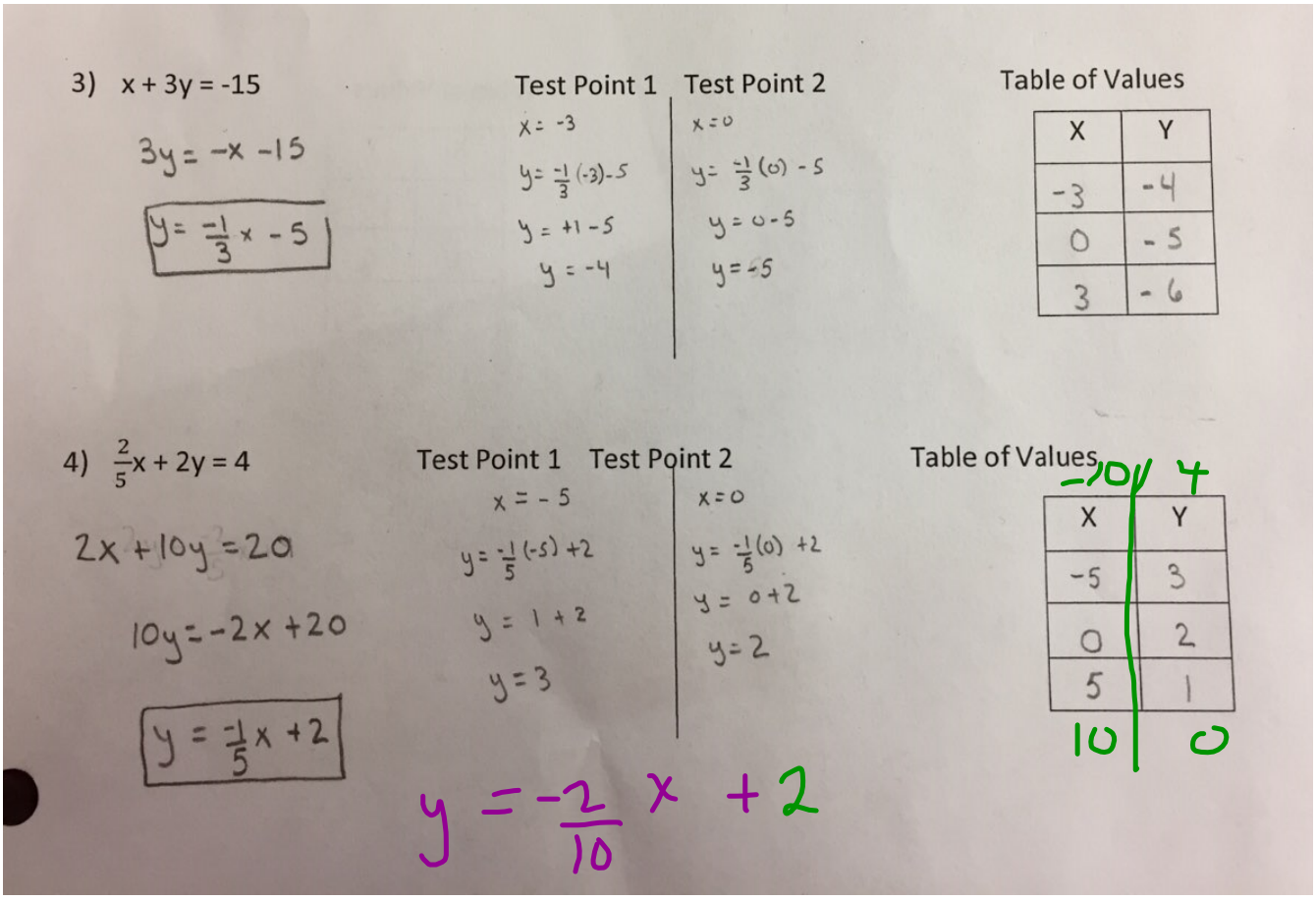
$y = 0 - 3$

$y = -3$

Table of Values

X	Y
-2	-4
0	-3
2	-2

3) $x + 3y = -15$ Test Point 1 Test Point 2 Table of Values



3) $x + 3y = -15$

$3y = -x - 15$

$y = \frac{-1}{3}x - 5$

Test Point 1: $x = -3$

$y = \frac{-1}{3}(-3) - 5$

$y = +1 - 5$

$y = -4$

Test Point 2: $x = 0$

$y = \frac{-1}{3}(0) - 5$

$y = 0 - 5$

$y = -5$

Table of Values

X	Y
-3	-4
0	-5
3	-6

4) $\frac{2}{5}x + 2y = 4$

$2x + 10y = 20$

$10y = -2x + 20$

$y = \frac{-1}{5}x + 2$

Test Point 1: $x = -5$

$y = \frac{-1}{5}(-5) + 2$

$y = 1 + 2$

$y = 3$

Test Point 2: $x = 0$

$y = \frac{-1}{5}(0) + 2$

$y = 0 + 2$

$y = 2$

Table of Values

-10 4

X	Y
-5	3
0	2
5	1

10 0

$y = \frac{-2}{10}x + 2$

5) $\frac{1}{3}y + 7x = -1$

$y + 21x = -3$

$y = -21x - 3$

Test Point 1

$x = -1$

$y = -21(-1) - 3$

$y = 21 - 3$

$y = 18$

Test Point 2

$x = 0$

$y = -21(0) - 3$

$y = 0 - 3$

$y = -3$

Table of Values

X	Y
-1	18
0	-3
1	-24

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

$3y - 4x = -18$

$3y = 4x - 18$

$y = \frac{4}{3}x - 6$

Test Point 1

$x = -3$

$y = \frac{4}{3}(-3) - 6$

$y = -4 - 6$

$y = -10$

Test Point 2

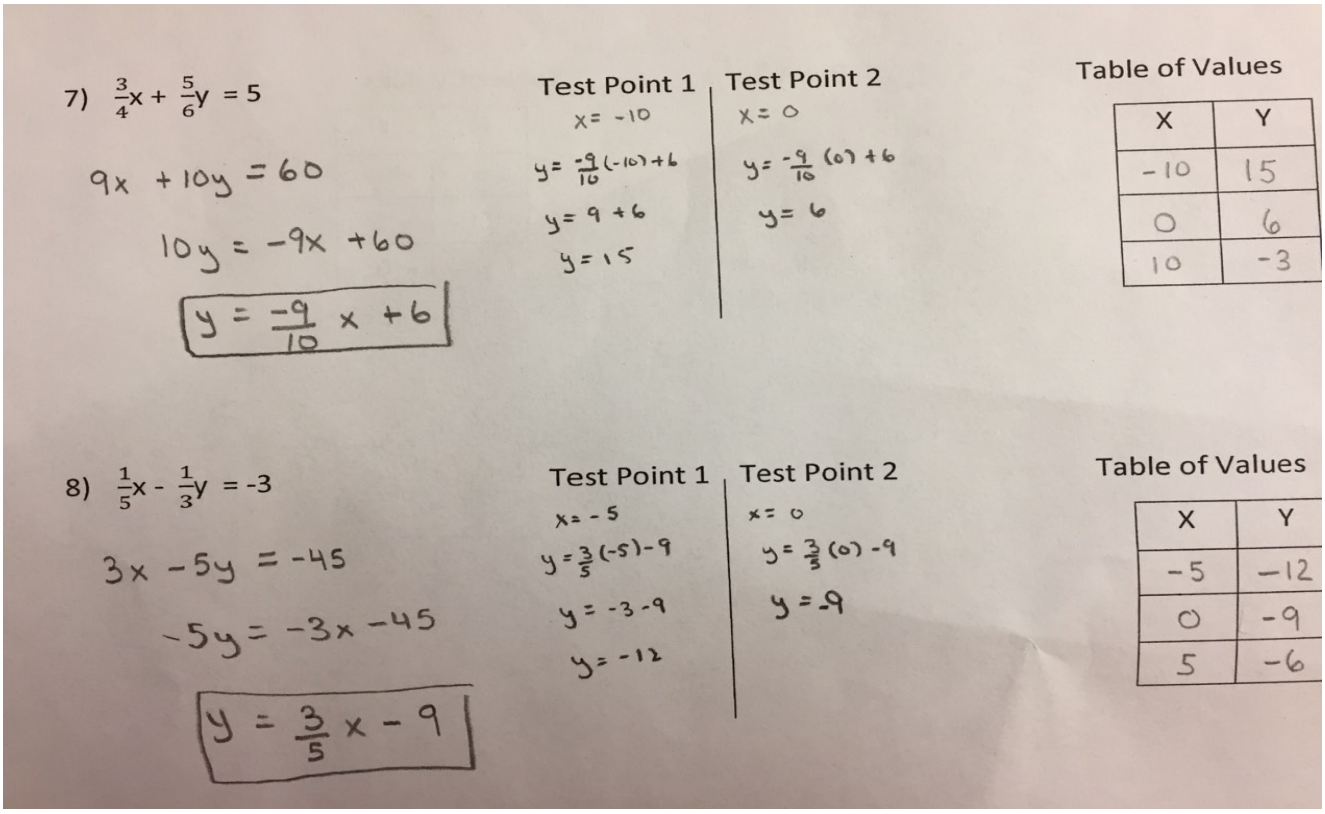
$x = 0$

$y = \frac{4}{3}(0) - 6$

$y = -6$

Table of Values

X	Y
-3	-10
0	-6
3	-2



7) $\frac{3}{4}x + \frac{5}{6}y = 5$

$9x + 10y = 60$

$10y = -9x + 60$

$y = \frac{-9}{10}x + 6$

Test Point 1

$x = -10$

$y = \frac{-9}{10}(-10) + 6$

$y = 9 + 6$

$y = 15$

Test Point 2

$x = 0$

$y = \frac{-9}{10}(0) + 6$

$y = 6$

Table of Values

X	Y
-10	15
0	6
10	-3

8) $\frac{1}{5}x - \frac{1}{3}y = -3$

$3x - 5y = -45$

$-5y = -3x - 45$

$y = \frac{3}{5}x - 9$

Test Point 1

$x = -5$

$y = \frac{3}{5}(-5) - 9$

$y = -3 - 9$

$y = -12$

Test Point 2

$x = 0$

$y = \frac{3}{5}(0) - 9$

$y = -9$

Table of Values

X	Y
-5	-12
0	-9
5	-6

Class/Homework

PAGE 178 - 180

4, 5, 6, 7, 8, 9, 11 , #15ad, # 17, # 21abcf

Use own x values

page 181

Mid unit Review

1,2,3(bdf),4,5ad,6,7

Use own x values

Attachments

Assignment 4.3.pdf