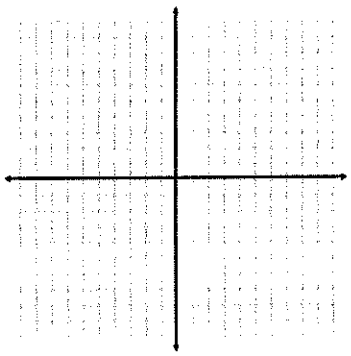
Practice
Graphing: Graphing an Equation by Using a T-Chart

Answer these problems, then check your answers using the key on the next page. If you missed something, look at the solutions after the answer key, and if you still don't understand, watch the review video again.

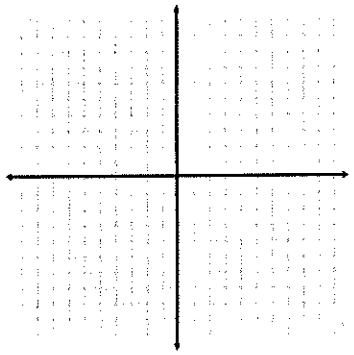
#1) Complete the t-chart and graph the equation: $y = x^3$

x	y
-2	
-1	
0	
1	
2	



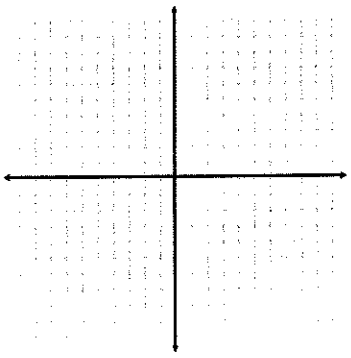
#2) Complete the t-chart and graph the equation: $y = 3(x-2)^2$

x	y
-2	
-1	
0	
1	
2	
3	
4	



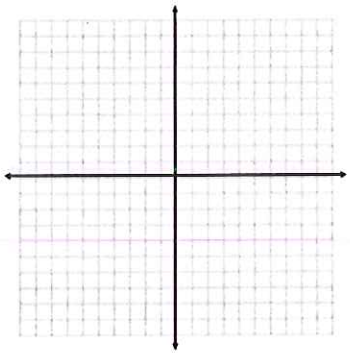
#3) Complete the t-chart and graph the equation: $y = |x|$

x	y
-2	
-1	
0	
1	
2	



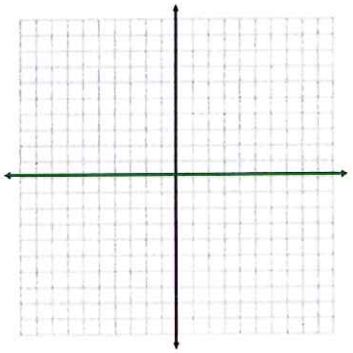
#4) Complete the t-chart and graph the equation: $y = 3^{(x-1)}$

x	y
-1	
0	
1	
2	
3	



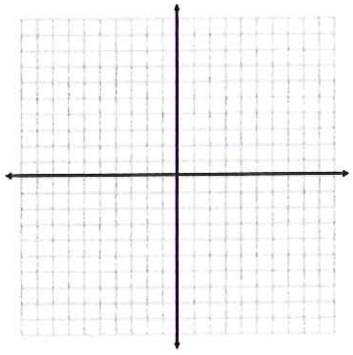
#5) Complete the t-chart and graph the equation: $y = -2$

x	y
-2	
-1	
0	
1	
2	



#6) Complete the t-chart and graph the equation: $y = -3x + 6$

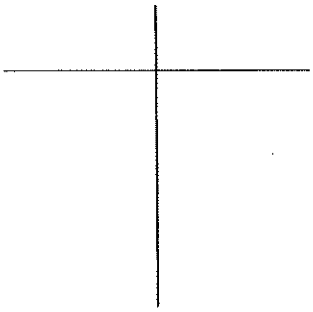
x	y
-2	
-1	
0	
1	
2	



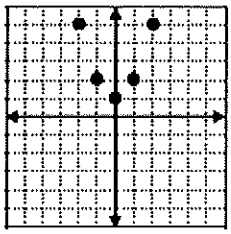
#7) Which is the graph of $y = x^2 + 1$

when $x \in \{-2, -1, 0, 1, 2\}$

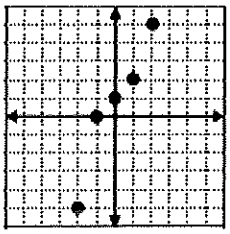
(This means 'x is an element of the set of numbers' it is a way to say what values x can be.)



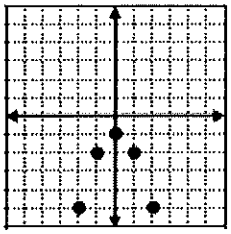
a)



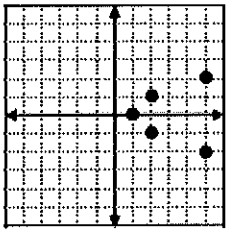
b)



c)



d)



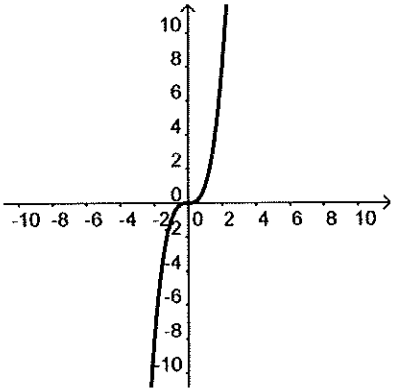
#8) Complete the table:

x	$y = 2x - 3$
	-21
-8	
	2
6	
	49

Answers:

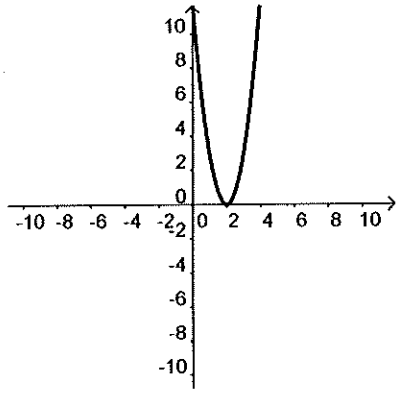
#1)

x	y
-2	-8
-1	-1
0	0
1	1
2	8



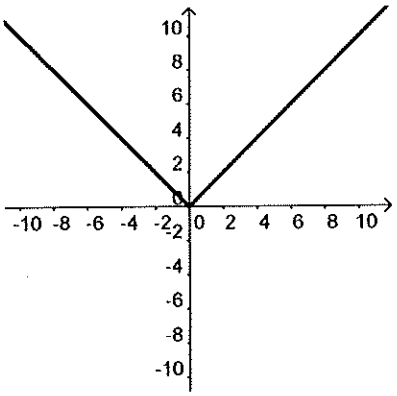
#2)

x	y
-2	48
-1	27
0	12
1	3
2	0
3	3
4	12



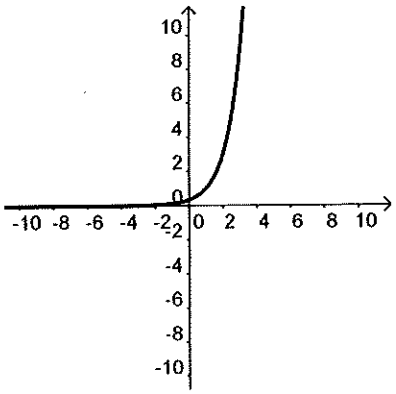
#3)

x	y
-2	2
-1	1
0	0
1	1
2	2



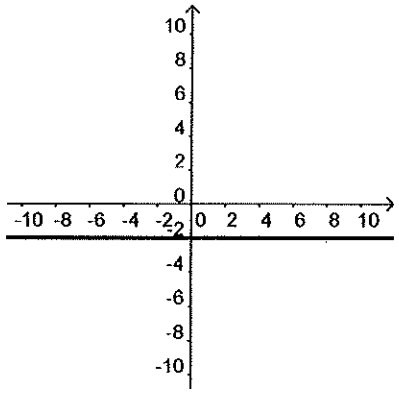
#4)

x	y
-1	$\frac{1}{9}$
0	$\frac{1}{3}$
1	1
2	3
3	9



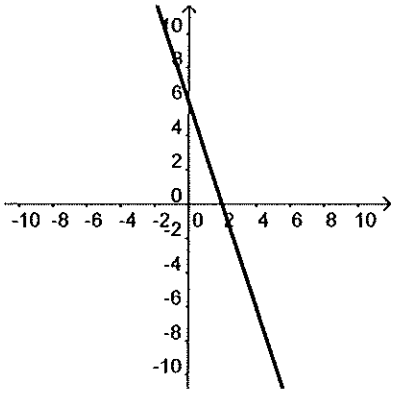
#5)

x	y
-2	-2
-1	-2
0	-2
1	-2
2	-2



#6)

x	y
-2	12
-1	9
0	6
1	3
2	0



#7) a

#8)

x	$y = 2x - 3$
-9	-21
-8	-19
$\frac{5}{2}$	2
6	9
26	49

Solutions:

#1) Complete the t-chart and graph the equation: $y = x^3$

x	y
-2	-8
-1	-1
0	0
1	1
2	8

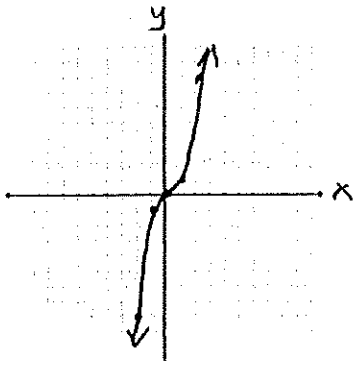
$y = (-2)^3 = (-2)(-2)(-2) = -8$

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

$y = 0^3 = 0$

$y = 1^3 = 1$

$y = 2^3 = 8$



#2) Complete the t-chart and graph the equation: $y = 3(x-2)^2$

x	y
-2	48
-1	27
0	12
1	3
2	0
3	3
4	12

$y = 3((-2)-2)^2 = 3(-4)^2 = 3(16) = 48$

$y = 3((-1)-2)^2 = 3(-3)^2 = 3(9) = 27$

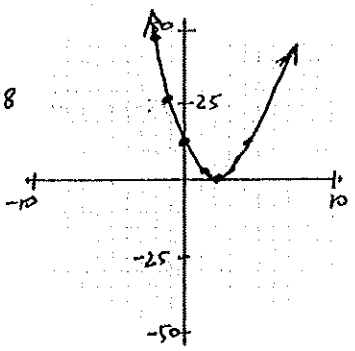
$y = 3((0)-2)^2 = 3(-2)^2 = 3(4) = 12$

$y = 3((1)-2)^2 = 3(-1)^2 = 3(1) = 3$

$y = 3((2)-2)^2 = 3(0)^2 = 0$

$y = 3((3)-2)^2 = 3(1)^2 = 3$

$y = 3((4)-2)^2 = 3(2)^2 = 3(4) = 12$



#3) Complete the t-chart and graph the equation: $y = |x|$

x	y
-2	2
-1	1
0	0
1	1
2	2

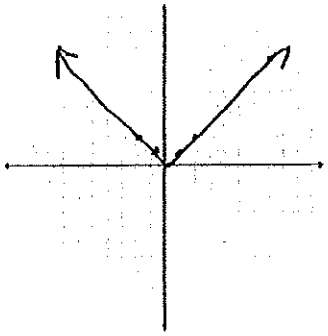
$y = |-2| = 2$

$y = |-1| = 1$

$y = |0| = 0$

$y = |1| = 1$

$y = |2| = 2$



#4) Complete the t-chart and graph the equation: $y = 3^{(x-1)}$

x	y
-1	$\frac{1}{9}$
0	$\frac{1}{3}$
1	1
2	3
3	9

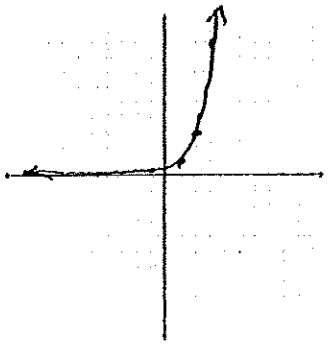
$y = 3^{((-1)-1)} = 3^{-2} = \frac{1}{3^2} = \frac{1}{9}$

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

$y = 3^{((1)-1)} = 3^0 = 1$

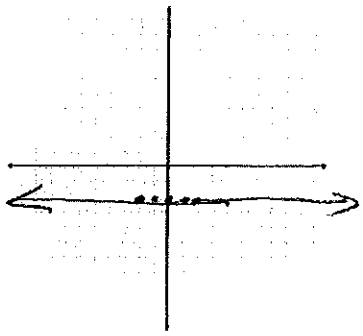
$y = 3^{((2)-1)} = 3^1 = 3$

$y = 3^{((3)-1)} = 3^2 = 9$



#5) Complete the t-chart and graph the equation: $y = -2$

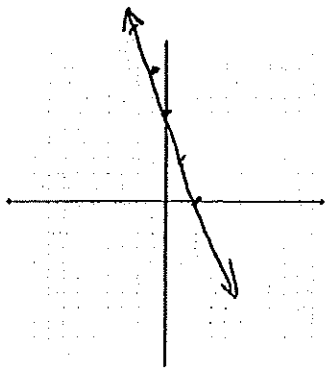
x	y
-2	-2
-1	-2
0	-2
1	-2
2	-2



#6) Complete the t-chart and graph the equation: $y = -3x + 6$

x	y
-2	12
-1	9
0	6
1	3
2	0

$y = -3(-2)+6 = 6+6 = 12$
$y = -3(-1)+6 = 3+6 = 9$
$y = -3(0)+6 = 0+6 = 6$
$y = -3(1)+6 = -3+6 = 3$
$y = -3(2)+6 = -6+6 = 0$

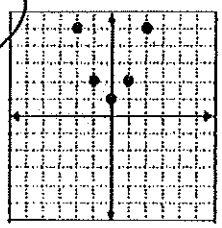


#7) Which is the graph of $y = x^2 + 1$ when $x \in \{-2, -1, 0, 1, 2\}$

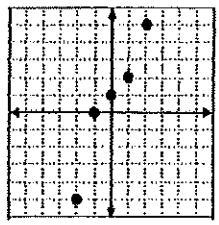
(This means 'x is an element of the set of numbers' it is a way to say what values x can be.)

x	y	
-2	5	$(-2)^2+1 = 4+1$
-1	2	$(-1)^2+1 = 1+1$
0	1	$(0)^2+1 = 1$
1	2	$(1)^2+1 = 2$
2	5	$(2)^2+1 = 5$

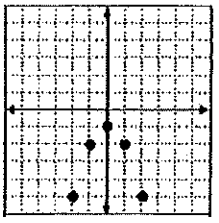
a)



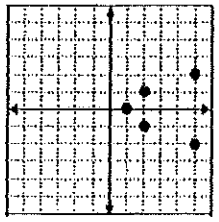
b)



c)



d)



#8) Complete the table:

(if given y, plug it in and solve for x)

x	$y = 2x - 3$
-9	-21
-8	-19
5/2	-2
6	9
26	49

$(-21) = 2x - 3$
$+3 \quad +3$
$-18 = 2x$
$\frac{-18}{2} = \frac{2x}{2}$
$-9 = x$

$y = 2(-8) - 3$
$y = -16 - 3$
$y = -19$

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

$y = 2(6) - 3$
$y = 12 - 3$
$y = 9$

$(49) = 2x - 3$
$+3 \quad +3$
$52 = 2x$
$\frac{52}{2} = \frac{2x}{2}$
$26 = x$