Unit 2 Review

I can determine if a function is linear

Determine if the table is linear or not. Explain your reasoning.

1.

X	Y
-1	3
1	6
3	9
5	12
7	15
9	18

+2, +2, +2, +2, +2 (left); +3, +3, +3, +3, +3 (right)

Linear b/c X & Y are increasing at a constant rate

2.

X	Y
1	1
4	2
9	3
16	4
25	5
36	6
49	7

+3, +5, +7 (left); +1 (right)

Not Linear b/c X isn't increasing at a constant rate.

3.

X	Y
1	0
2	1
3	0
4	1
5	0
6	1
7	0

+1 (left); +1, -1, +1, -1 (right)

Not linear b/c y isn't increasing at a constant rate.

4.

X	Y
2	1
4	0
6	1
8	0
16	1
32	0
64	1

+2, +2, +2, +8 (left); -1, +1 (right)

Not linear b/c X & Y aren't increasing at a constant rate

I can find the rate of change of a graph, table, and two points.

5.
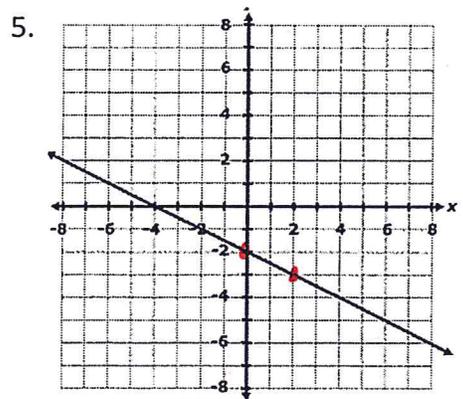
$-\dfrac{1}{2}$

6.

Time (days)	Cost (dollars)
3	75
4	100
5	125
6	150

+1 ; +25

$\dfrac{25}{1} = $ **$25 per day**

7.

Time (hours)	Distance (miles)
4	232
6	348
8	464
10	580

+2 ; +116

$\dfrac{116}{2} = $ **58 miles per hour**

8. (1,-5) (1,4)

$\dfrac{4--5}{1-1} = \dfrac{9}{0}$

Undefined

9. (-4,6) (2,6)

$\dfrac{6-6}{2-4} = \dfrac{0}{6} = \boxed{0}$

10. (4,-3) (-5,-7)

$\dfrac{-7--3}{-5-4} = \dfrac{-4}{-9}$

$= \boxed{\dfrac{4}{9}}$

11. (-8,5) (-4,7)

$\dfrac{7-5}{-4--8} = \dfrac{2}{4} = \dfrac{1}{2}$

HOY   VUX

Write the equation for each line. Determine the slope
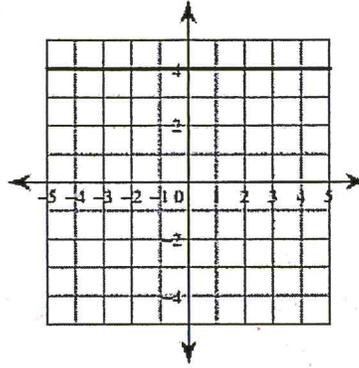
15.
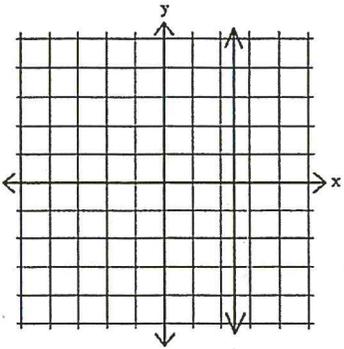
Equation:

$x = 2.5$

Slope:

Undefined

16.

Equation:

$y = 4$

Slope:
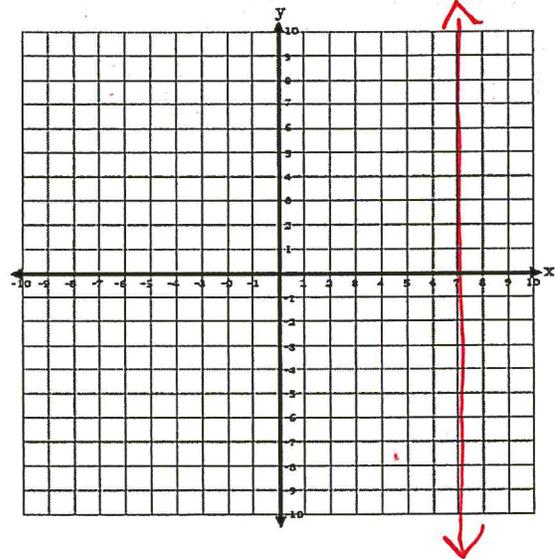
0

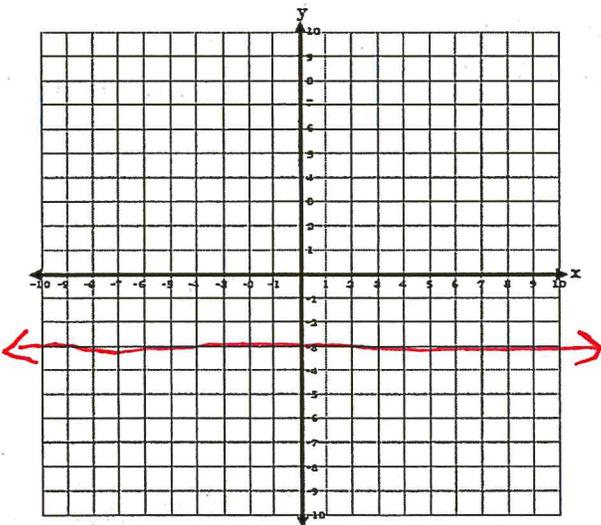**Graph the line AND find the slope**

17. $y = -3$

Slope : 0

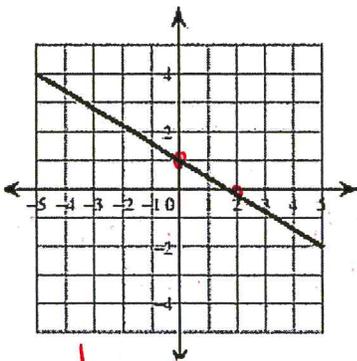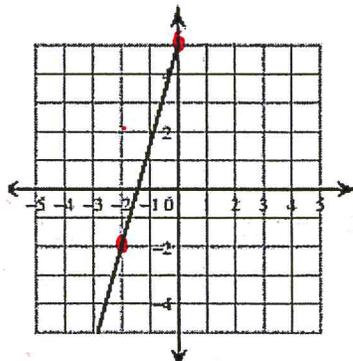18. X=7

Slope: Undefined

I can write an equation in Slope-Intercept form

Write the equation in Slope- Intercept form

15.

Slope: $-\frac{1}{2}$
y-int: (0,1)

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

16.

Slope: $\frac{7}{2}$
Y-int: (0,5)

$y = \frac{7}{2}x + 5$

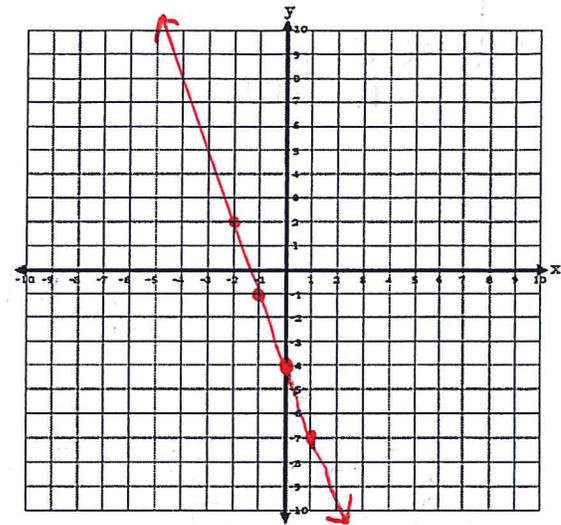17. Slope= 5 Y-Int = -4

$y = 5x - 4$

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

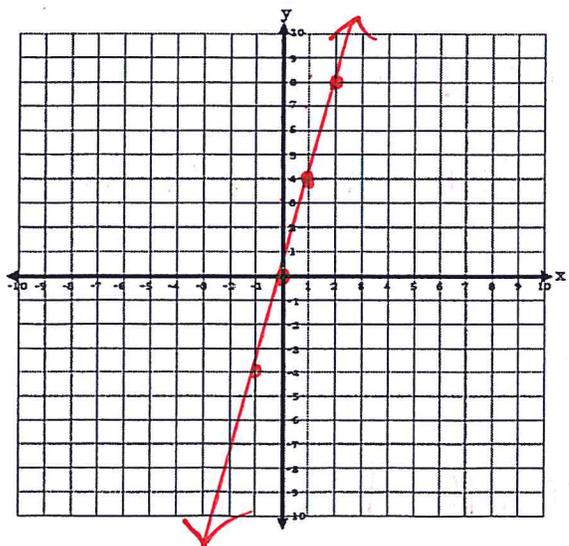Slope: $-\frac{1}{2}$

Y-Int : $(0,2)$
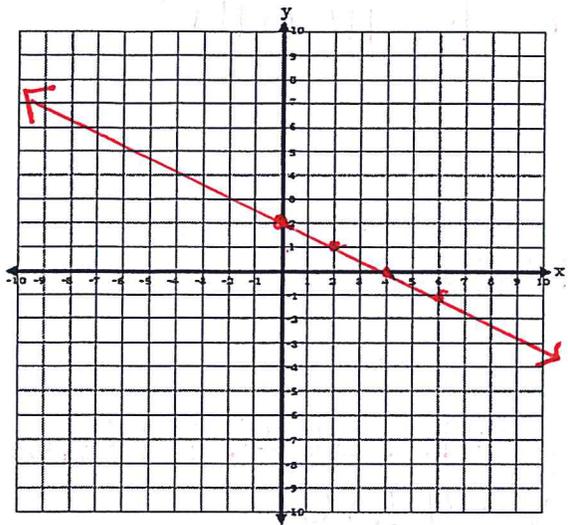
19. $y = -3x - 4$

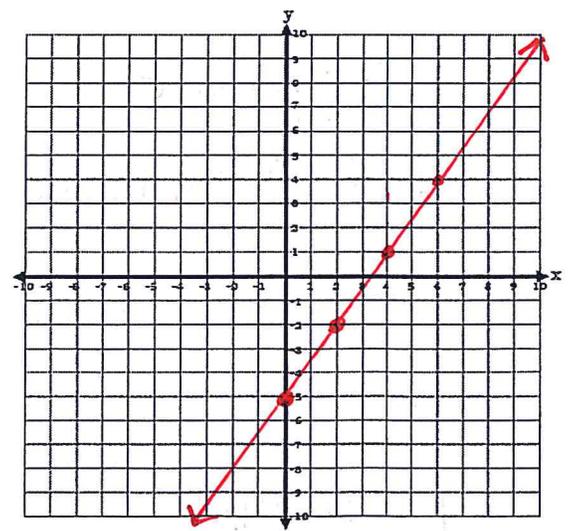Slope: $\frac{-3}{1}$

Y-Int : $(0,-4)$

20. $y = 4x$

Slope: $\frac{4}{1}$

Y-Int : $(0,0)$

21. $y = \frac{3}{2}x - 5$

Slope: $\frac{3}{2}$

Y-Int : $(0,-5)$

1. In order to become a member of Math Club, there is a $30 sign-up fee and a $8 monthly fee. Write an equation in slope intercept form to model the situation.

$$y = 8x + 30$$

What is the cost to join the club for 6 months? For 15 months?

$y = 8(6) + 30$
$y = 78$
$78 for 6 months

$y = 8(15) + 30$
$y = 150$
$150 for 15 months

2. When visiting Los Angeles, CA you need to rent an Uber to get from your hotel to Nick Jonas' house. Uber charges a flat fee of $4.00 and $1.75 per mile. Write an equation in slope-intercept form to model this situation.

$$y = 1.75x + 4.00$$

What will the cost of your trip be if Nick lives 50 miles away? If he lives 26 miles away?

$y = 1.75(50) + 4.00$
$y = 91.50$
$91.50 for 50 miles.

$y = 1.75(26) + 4.00$
$y = 49.50$
$49.50 for 26 miles

3. To join YouTube Red, it cost $40 to join and additional $10 per month. Write an equation in slope-intercept form to model this situation.

$$y = 10x + 40$$

How much will it cost after 11 months? After 17 months?

$y = 10(11) + 40$
$y = 150$
$150 for 11 months

$y = 10(17) + 40$
$y = 210$
$210 for 17 months

4. To join the tennis team, it cost a flat rate fee of $75 and $30 per lesson. Write an equation in slope-intercept form to model this situation

$$y = 30x + 75$$

How much will it cost for 4 lessons? For 10 lessons?

$y = 30(4) + 75$
$y = 195$
$195 for 4 lessons

$y = 30(10) + 75$
$y = 375$
$375 for 10 lessons