# WARM-UP

June 4, 2019

$$\frac{m}{4} + 5 = \frac{1}{2} - m$$

LCM: 4

$$\frac{4m}{4} + 20 = \frac{4}{2} - 4m$$

$$m + 20 = 2 - 4m$$

$$m + 4m + 20 = 2 - 4m + 4m$$

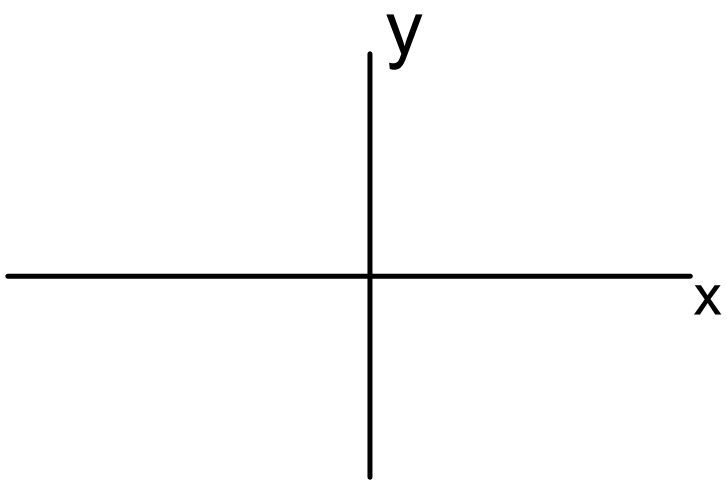
$$5m + 20 = 2$$

$$5m + 20 - 20 = 2 - 20$$

$$\frac{5m}{5} = \frac{-18}{5}$$

$$m = -18/5 \quad (-3\tfrac{3}{5})$$

# Unit 4
# Linear Relations



1. The pattern in this table continues. Determine the ~~expression~~ equation that relates the number of triangles to the figure number.

| Figure, $f$ | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Number of Triangles, $t$ | 2 | 4 | 6 | 8 | 10 |

figure(f) # t

1 → 2 (+2)
2 → 4 (+2)
3 → 6 (+2)
4 → 8 (+2)
5 → 10

$t = 2f$

2. Complete the table of values.

$y = 9 - 5x$

| $x$ | 2 | 4 | 6 | 8 |
|---|---|---|---|---|
| $y$ | -1 | -11 | -21 | -31 |

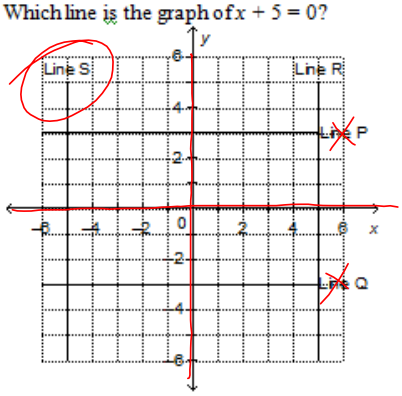
| x | y |
|---|---|
| | |

$x = 2$
$y = 9 - 5x$
$y = 9 - 5(2)$
$y = 9 - 10$
$y = -1$

$x = 4$
$y = 9 - 5x$
$y = 9 - 5(4)$
$y = 9 - 20$
$y = -11$

$x = 6$
$y = 9 - 5x$
$y = 9 - 5(6)$
$y = 9 - 30$
$y = -21$

3. Which line is the graph of $x + 5 = 0$?




$x+5=0$

$x+5-5=0-5$

$x=-5$

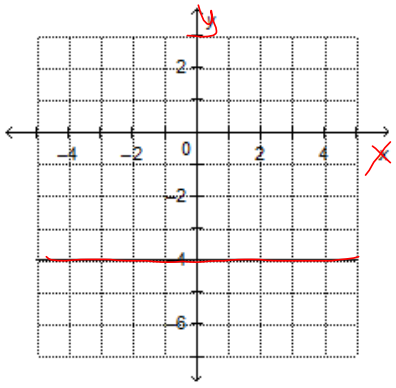
just an "x" vertical line

just a "y" get horizontal line

x and y oblique line Need table of value!

*Study*

4. Write an equation that describes the line.

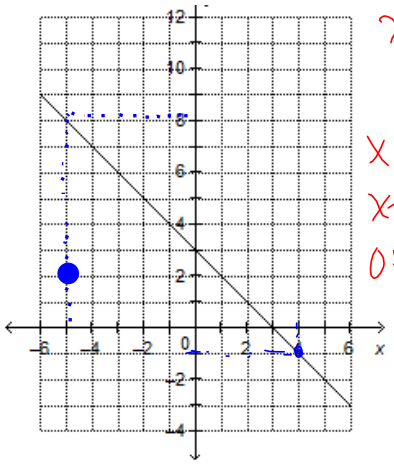



$y=-4$

5. Which equation describes a horizontal line?

i) $x + 9 = 2$
ii) $y + x = 9$
iii) $y - x = 0$
iv) $y + 2 = 9$

6. Which equation describes the graph?
   i) $x+y=3$
   ii) $x-y=3$
   iii) $y-x=3$
   iv) $x+y=-3$



$x+y=3$

| x | y |
|---|---|
| 0 | 3 |
| 1 | 2 |
| 2 | 1 |

$x=0$: $x+y=3$, $0+y=3$, $y=3$

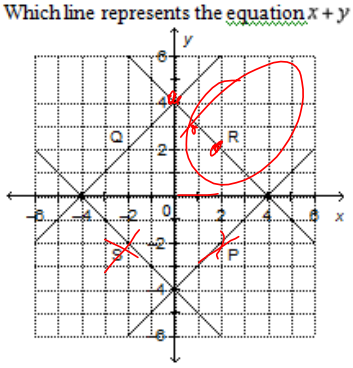
$x=1$: $x+y=3$, $1+y=3$, $1-1+y=3-1$, $y=2$

$x=2$: $x+y=3$, $2+y=3$, $2-2+y=3-2$, $y=1$

If "x" = 4 what is y = ?

If "y" = 8 what is x = ?

7. Which line represents the equation $x+y=4$?




$x+y=4$

| x | y |
|---|---|
| 0 | 4 |
| 1 | 3 |
| 2 | 2 |

$x=0$: $x+y=4$, $0+y=4$, $y=4$

$x=1$: $x+y=4$, $1+y=4$, $1-1+y=4-1$, $y=3$

$x=2$: $x+y=4$, $2+y=4$, $2-2+y=4-2$, $y=2$

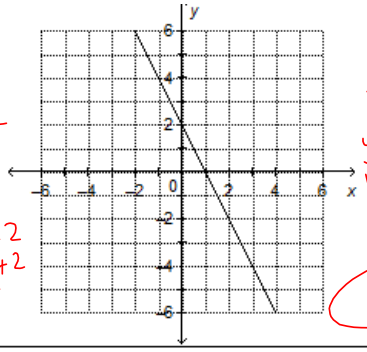
8. Which equation describes the graph below?

i) ~~$y = 2x$~~

ii) $y = 2x + 2$

iii) $y = -x + 2$

iv) $y = -2x + 2$



$y = 2x$

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

$x = 0$

$y = 2(0)$

$y = 0$

$y = 2x + 2$

| x | y |
|---|---|
| 0 | 2 |
| 1 | 4 |
| 2 | |

$x = 0$

$y = 2(0) + 2$

$y = 2$

$x = 1$

$y = 2(1) + 2$

$y = 4$

$y = -x + 2$

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

$x = 0$

$y = -0 + 2$

$y = 2$

$x = 1$

$y = -1 + 2$

$y = 1$

$y = -2x + 2$

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

$x = 0$

$y = -2x + 2$

$y = -0 + 2$

$y = 2$

$x = 1$

$y = -2x + 2$

$y = -2(1) + 2$

$y = 0$

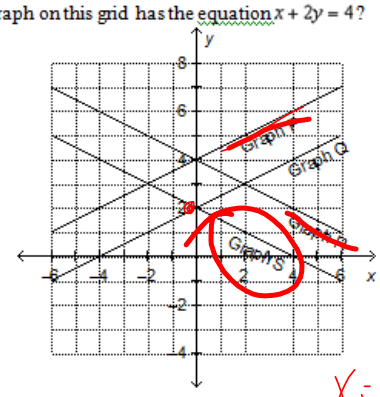
$x = 2$

$y = -2x + 2$

$y = -2(2) + 2$

$y = -2$

9. Which graph on this grid has the equation $x + 2y = 4$?




$x + 2y = 4$

| x | y |
|---|---|
| 0 | 2 |
| 1 | 1.5 |
| 2 | 1 |

$x = 0$

$x + 2y = 4$

$0 + 2y = 4$

$\frac{2y}{2} = \frac{4}{2}$

$y = 2$

$x = 1$

$x + 2y = 4$

$1 + 2y = 4$

$1 - 1 + 2y = 4 - 1$

$\frac{2y}{2} = \frac{3}{2}$

$y = 1.5$

$x = 2$

$x + 2y = 4$

$2 + 2y = 4$

$2 - 2 + 2y = 4 - 2$

$\frac{2y}{2} = \frac{2}{2}$

$y = 1$

10. Shirley has $540 in her bank account. She withdraws $35 each week to cover her expenses.

A)Write an equation that relates the amount of money in her account, *A* dollars, after *n* weeks.

$A = 540 - 35n$

b) Determine the amount of money in Shirley's account after 8 weeks.

$A = 540 - 35n$

$= 540 - 35(8)$

$= 540 - 280$

$= \$260$

11. Dorina is having a party. She estimates that she will need 5 sandwiches for each guest, and 12 extra sandwiches for unexpected guests.

a) Write an equation that relates the total number of sandwiches, *T*, to the number of guests, *p*.

$T = 5p + 12$

b) How many sandwiches will Dorina need for 16 guests?

$T = 5(16) + 12$

$T = 80 + 12$

$T = 92$

12. This is a partially completed table of values for a linear relation. Determine the missing values of $y$.

| $x$ | 1 | 3 | 5 | 7 | 9 |
|---|---|---|---|---|---|
| $y$ | 6 | 17 | 28 | 39 | 50 |

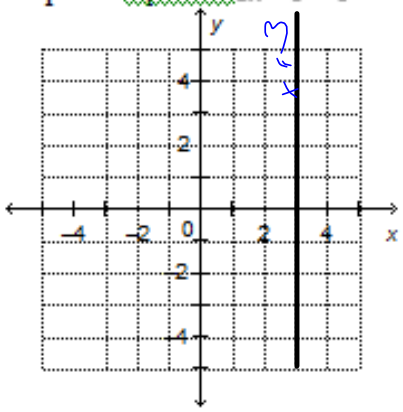
+11

As x increased by 2 y increased by 11.

b) ~~Write an equation that represents~~ describe the linear relation.

NO Table of values!!!

13. Graph the equation $2x - 3 = 3$.




$2x - 3 = 3$

$2x - 3 + 3 = 3 + 3$

$\frac{2x}{2} = \frac{6}{2}$

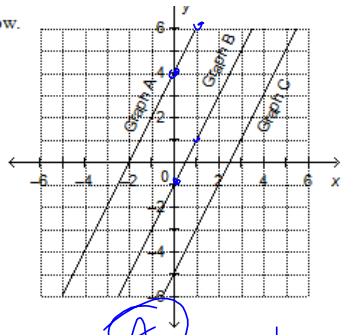
$x = 3$

14. Match each equation with a graph on the grid below.

i) $y = 2x - 1$ B

ii) $y = 2x + 4$

iii) $y = 2x - 5$




B

| x | y |
|---|---|
| 0 | −1 |
| 1 | 1 |
| 2 | 3 |

$y = 2x - 1$

$x = 0$: $y = 2x - 1$, $y = 0 - 1$, $y = -1$

$x = 1$: $y = 2x - 1$, $y = 2 - 1$, $y = 1$

$x = 2$: $y = 2x - 1$, $y = 2(2) - 1$, $y = 3$

A

| x | y |
|---|---|
| 0 | 4 |
| 1 | 6 |
| 2 | 8 |

$y = 2x + 4$

$x = 0$: $y = 2x + 4$, $y = 2(0) + 4$, $y = 4$

$x = 1$: $y = 2x + 4$, $y = 2(1) + 4$, $y = 6$

$x = 2$: $y = 2x + 4$, $y = 2(2) + 4$, $y = 8$

C

| x | y |
|---|---|
| 0 | −5 |
| 1 | −3 |
| 2 | 1 |

$y = 2x - 5$

$x = 0$: $y = 2x - 5$, $y = 2(0) - 5$, $y = -5$

$x = 1$: $y = 2x - 5$, $y = 2(1) - 5$, $y = -3$

$x = 2$: $y = 2x - 5$, $y = 2(2) - 5$, $y = -1$

* Complete Chp 4 Review

[Mark on sheets]

* Make Sure 1-28 from Chp 6

## Attachments

day 4 worksheet.doc