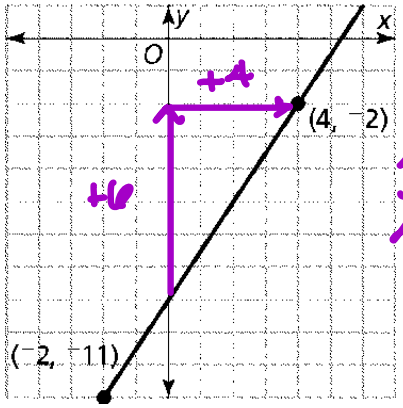
Algebra 8 TWMM Review

Write the equation for the lines shown in the graphs below.

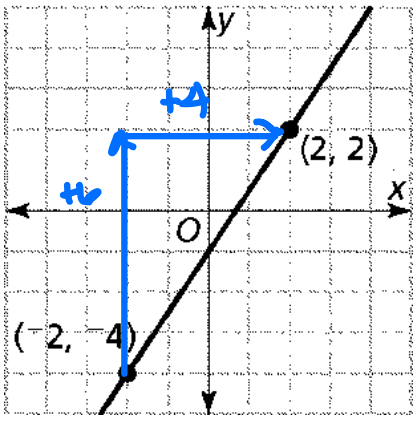
A



$\frac{\Delta y}{\Delta x} = \frac{6}{4} = \frac{3}{2}$

$y = \frac{3}{2}x - 8$

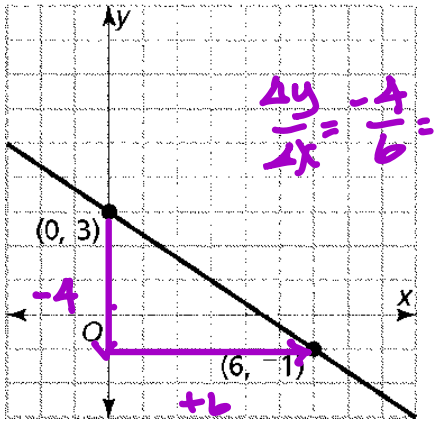
B



$\frac{\Delta y}{\Delta x} = \frac{6}{4} = \frac{3}{2}$

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

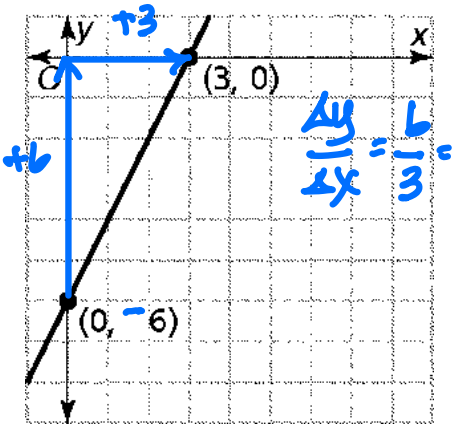
C



$\frac{\Delta y}{\Delta x} = \frac{-4}{6} = -\frac{2}{3}$

$y = -\frac{2}{3}x + 3$

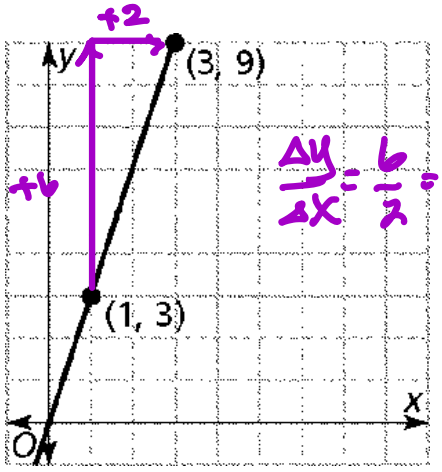
D



$\frac{\Delta y}{\Delta x} = \frac{6}{3} = 2$

$y = 2x - 6$

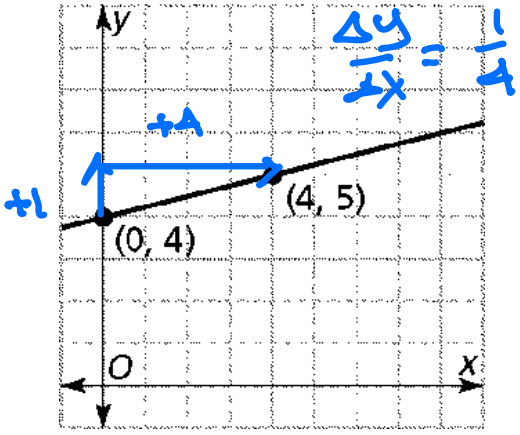
E



$\frac{\Delta y}{\Delta x} = \frac{6}{2} = 3$

$y = 3x$

F



$\frac{\Delta y}{\Delta x} = \frac{1}{4}$

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

Algebra 8 TWMM Review

Determine whether the relationship between x and y is linear or not. If it is linear, write the equation. If it is not linear, explain how you know.

G

x	2	4	6	8
y	21	16	12	7

+2 +2 +2

-5 -4 -5

$\frac{\Delta y}{\Delta x} = \frac{-5}{2} \neq \frac{-4}{2} \neq \frac{-5}{2}$ Not linear. no constant slope

H

x	1	2	4	6
y	15	19	27	35

I

x	1	2	3	4
y	16	24	32	40

+1 +1 +1

+8 +8 +8

$\frac{\Delta y}{\Delta x} = \frac{8}{1}$ $y = 8x + 8$

J

x	5	-5	-13	-21
y	-2	3	7	11

K

x	3	6	9	15
y	2	3	4	6

+3 +3 +6

+1 +1 +2

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

$y = \frac{1}{3}x + b$

$2 = \frac{1}{3}(3) + b$

$2 = 1 + b$

$-1 \quad -1$

$1 = b$

$y = \frac{1}{3}x + 1$

L

x	1	2	3	4
y	2	4	8	16

M

x	2	3	4	5
y	15	17	19	21

+1 +1 +1

+2 +2 +2

$\frac{\Delta y}{\Delta x} = \frac{2}{1}$

$y = 2x + b$

$15 = 2(2) + b$

$15 = 4 + b$

$-4 \quad -4$

$11 = b$

$y = 2x + 11$

N

x	2	4	6	8
y	17	29	41	53

O

x	-4	-2	2	4
y	6	10	18	22

+2 +4 +2

+4 +8 +4

$\frac{\Delta y}{\Delta x} = \frac{4}{2} = \frac{8}{4} = 2$

$y = 2x + b$

$18 = 2(2) + b$

$18 = 4 + b$

$-4 \quad -4$

$14 = b$

$y = 2x + 14$

P

x	3	6	9	15
y	8	7	6	5

Q

x	7	25	30	37
y	-2	-2	-2	-2

+18 +5 +2

+0 +0 +0

$\frac{\Delta y}{\Delta x} = \frac{0}{18} = \frac{0}{5} = \frac{0}{2} = 0$

$y = 0x + b$

$-2 = 0(7) + b$

$-2 = b$

$y = -2$

R

x	1	3	5	7
y	10	7	4	1

Algebra 8 TWMM Review

Write the equation of the line given the following conditions:

S passes through the points (2, 7) and (6, 15)	**T** with slope −2 that passes through the point (3, −9)

$+4 \langle \begin{matrix} 2,7 \\ 6,15 \end{matrix} \rangle +8$ $\quad \frac{\Delta y}{\Delta x} = \frac{8}{4} = 2$

$y = 2x + b$

$7 = 2(2) + b$

$7 = 4 + b$

$-4 \quad -4$

$3 = b$

$y = 2x + 3$

$y = -2x + b$

$-9 = -2(3) + b$

$-9 = -6 + b$

$+6 \quad +6$

$-3 = b$

$y = -2x - 3$

U passes through the points (2, −9) and (−2, 3)	**V** with slope $\frac{3}{2}$ that passes through the point (−2, 0)

$-4 \langle \begin{matrix} 2,-9 \\ -2,3 \end{matrix} \rangle +12$ $\quad \frac{\Delta y}{\Delta x} = \frac{12}{-4} = -3$

$y = -3x + b$

$-9 = -3(2) + b$

$-9 = -6 + b$

$+6 \quad +6$

$-3 = b$

$y = -3x - 3$

$y = \frac{3}{2}x + b$

$0 = \frac{3}{2}(-2) + b$

$0 = -3 + b$

$+3 \quad +3$

$3 = b$

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

w	**x**
passes through the points (4, 1) and (-2, 4)	with slope $\frac{2}{3}$ that passes through the point (6, 2)

4, 1
-6 ↙ -2, 4 +3

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

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

$1 = -\frac{1}{2}(4) + b$

$1 = -2 + b$

$+2 \quad +2$

$3 = b$

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

$y = \frac{2}{3}x + b$

$2 = \frac{2}{3}(6) + b$

$2 = 4 + b$

$-4 \quad -4$

$-2 = b$

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

Write the equation of the line given the following conditions:

S passes through the points (2, 7) and (6, 15)	**T** with slope –2 that passes through the point (3, –9)
U passes through the points (2, –9) and (–2, 3)	**V** with slope $\frac{3}{2}$ that passes through the point (–2, 0)
W passes through the points (4, 1) and (-2, 4)	**X** with slope $\frac{2}{3}$ that passes through the point (6, 2)
Y passes through the points (2, 1) and (6, 9)	**Z** with slope -4 that passes through the point (–7, 5)
a with slope = $\frac{1}{2}$ that passes through the point (-10, 7)	**b** passes through the points (2, -11) and (-5, 10)
c passes through the points (8, 2) and (-2, 7)	**d** passes through the points (-2, 2) and (3, -2)