Algebra 1   3.2

Solve linear equations by graphing   x-int

Estimate solutions to a linear equation by graphing

Equations with no solution :O

linear function
parent function
family of graphs
solution (root) of an equation
zero of a function
activ: whiteboards

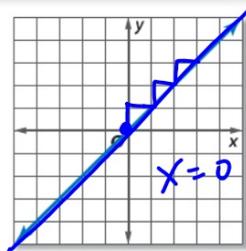$y = x$

$y = x+3$
$x-1$
$x+6$

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

KeyConcept Linear Function

Parent function:	$f(x) = x$
Type of graph:	line
Domain:	all real numbers
Range:	all real numbers

$X = 0$

Whiteboards

Solve each equation by graphing. Verify your answer algebraically.

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1. $-2x + 6 = 0$
2. $-x - 3 = 0$
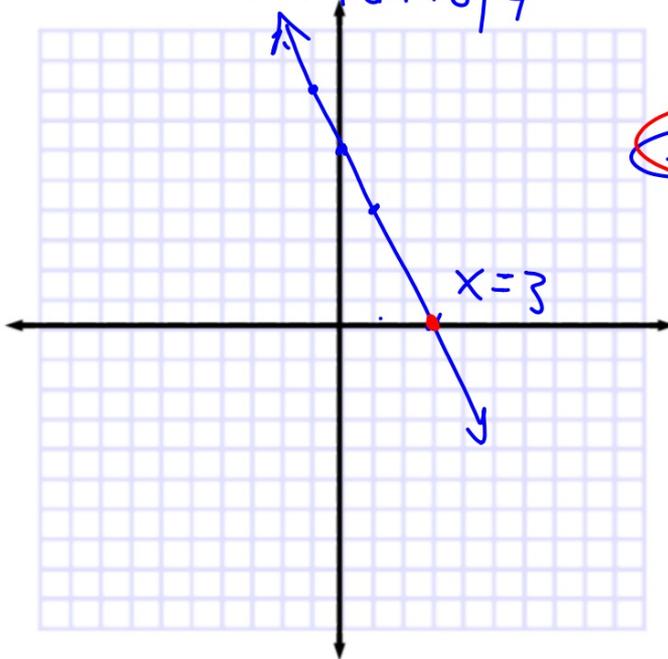
$y = -2x + 6$

x	-2x+6	
-1	-2·-1+6=	8
3	-2·3+6	0
0	-2·0+6	6
-1	-2·1+6	4

$X = 3$

$y = -x - 3$

2	-2-3	-5
4	-4-3	-7
1	-1-3	-4
-3	--3-3	0
0	-0-3	3

$X = -3$

3. $4x - 2 = 0$

$y = 4x - 2$

$4\frac{2}{2} - 2$
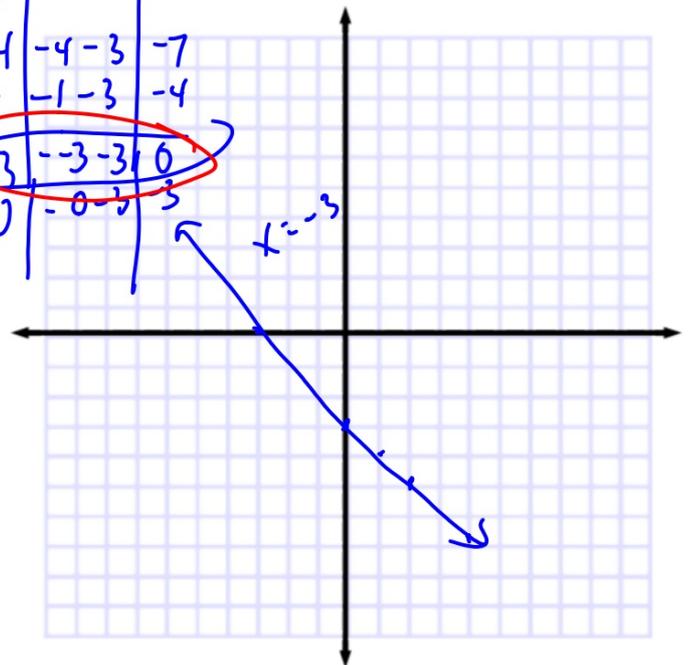
$\frac{2-2}{}$

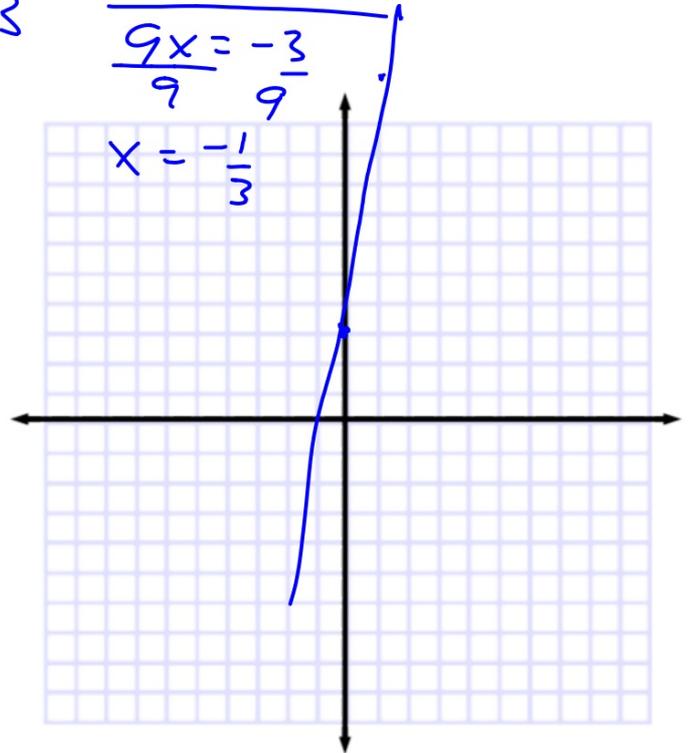| $4x-2$	
2	$8-2$	6
-1	$4-2$	2
-1	$-4-2$	-6
0	$0-2$	-2

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

4. $9x + 3 = 0$

$y = 9x + 3$

$9x + 3 = 0$

$\quad -3 \quad -3$

$\dfrac{9x}{9} = \dfrac{-3}{9}$

$x = -\dfrac{1}{3}$

Example 2 Solve an Equation with No Solution

Solve each equation.

a. $3x + 7 = 3x + 1$

$-3x \qquad -3x$

$3 = 1$

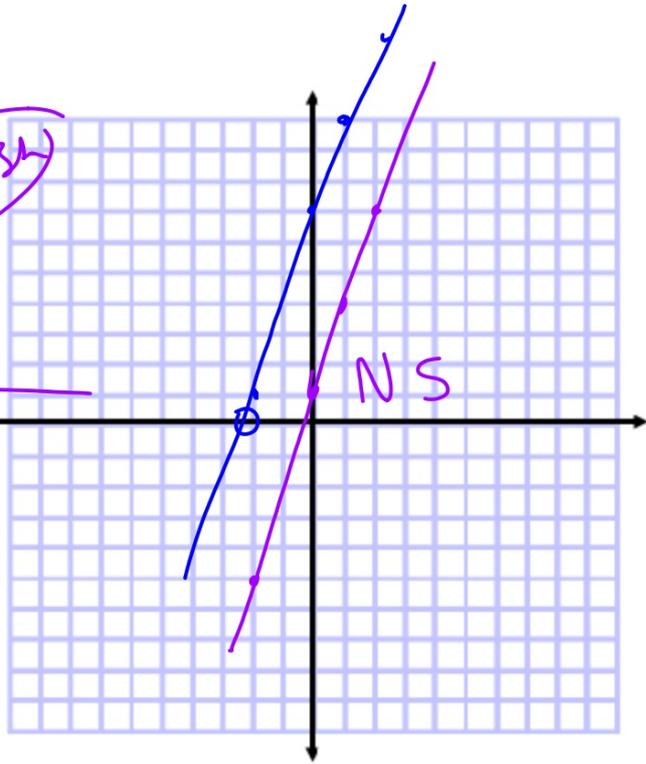$y = 3x + 7 \qquad y = 3x + 1$

$\boxed{x = \frac{1}{2}(3x)}$

$\boxed{-2.5 \text{ ish}}$

X	3+7	
1	3+7	10
2	6+7	13
0	0+7	7
-2	-6+7	1

Solve by graphing.
Where do they meet?

x	3x+1	
1	3+1	4
2	6+1	7
0	0+1	1
-2	-6+1	-5
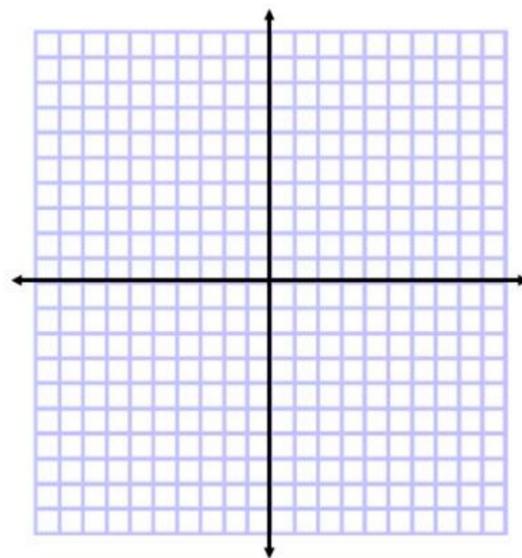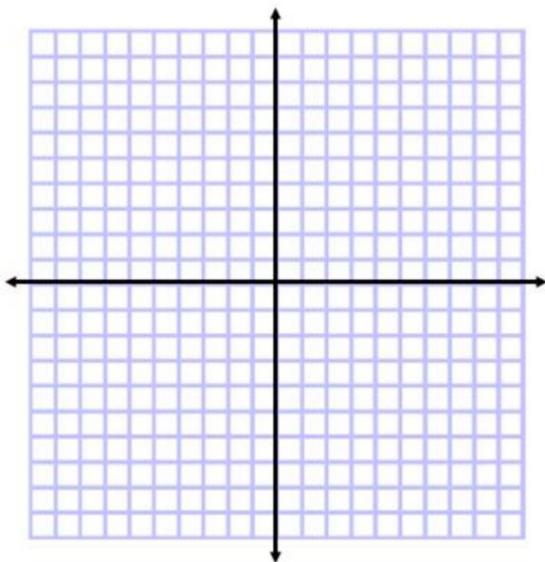
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5. $2x - 5 = 2x + 8$

$+2x \quad -2x$

$-5 = 8$

6. $4x + 11 = 4x - 24$

$-4x \quad -4x$

$11 = -24$

7. $3x - 5 = 3x - 10$

$3x - 5 = 3x - 5$
$-3x \qquad -3x$
_____
$-5 = -5$

8. $-6x + 3 = -6x + 5$
$+6x \qquad\quad +6x$
_____
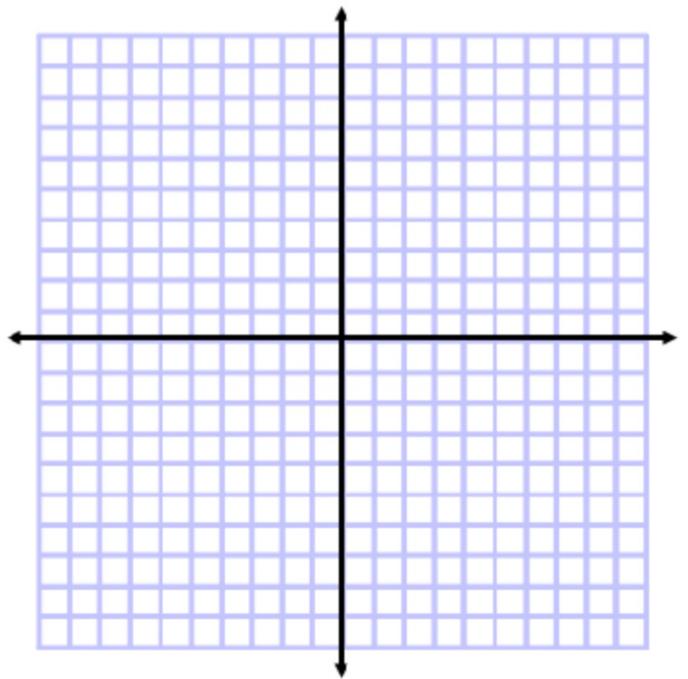$3 = 5$

2A. $4x + 3 = 4x - 5$

2B. $2 - 3x = 6 - 3x$

9. NEWSPAPERS The function $w = 30 - \frac{3}{4}n$ represents the weight w in pounds of the papers in Tyrone's newspaper delivery bag after he delivers n newspapers. Find the zero and explain what it means in the context of this situation.