Name: _____ **Date** _____ **#37 Standard Form**

For each equation below, decide if it is linear or not linear. If it is not linear, explain why not. If it is linear, tell which form of a line is given. If it is not in one of the three possible linear forms, change it to slope intercept form.

1) $9x - 7y = -7$

① Linear
② Standard form
③ N/A, its in ↑

2) $y - 7 = 4(x + 2)$

① Linear
② point slope
③ N/A, its in ↑

3) $y = \frac{1}{2}x^2 - 5$

① Not Linear
② There's an exponent of 2
③ N/A b/c not linear

4) $\frac{5}{2}x + 4y = 8$

① Linear
② None
③ $\frac{5}{2}x + 4y = 8$
$-\frac{5}{2}x \quad -\frac{5}{2}x$

$\frac{4y}{4} = \frac{-\frac{5}{2}x}{4} + \frac{8}{4}$

$y = -\frac{5}{8}x + 2$

5) $y = 3x + 4$

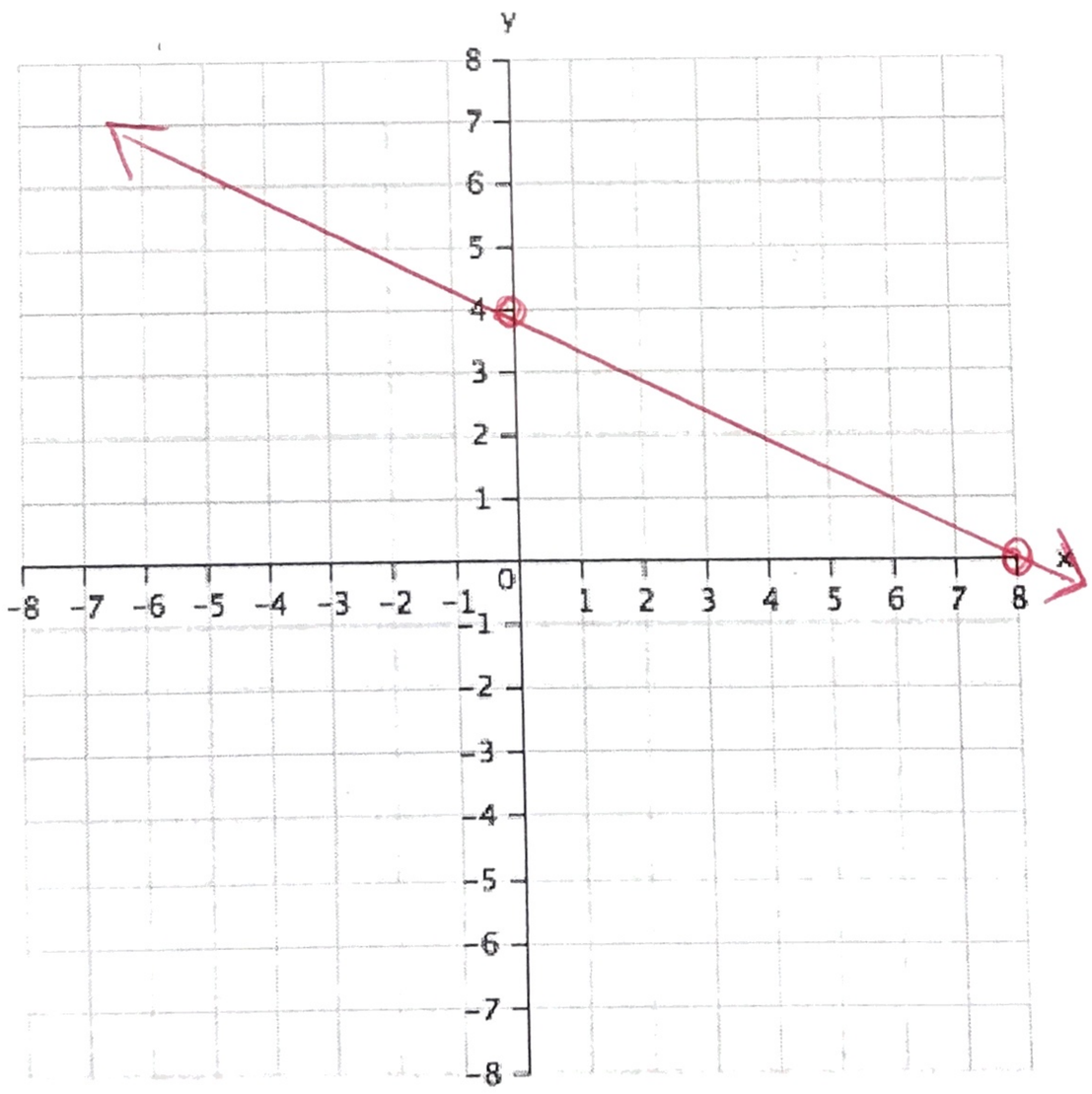
① Linear
② Slope int.
③ N/A, its already

6) $x - 3y = 6$

① Linear
② Standard
③ N/A, its in ↑

Find the x and y intercepts of each equation. Then graph the line.

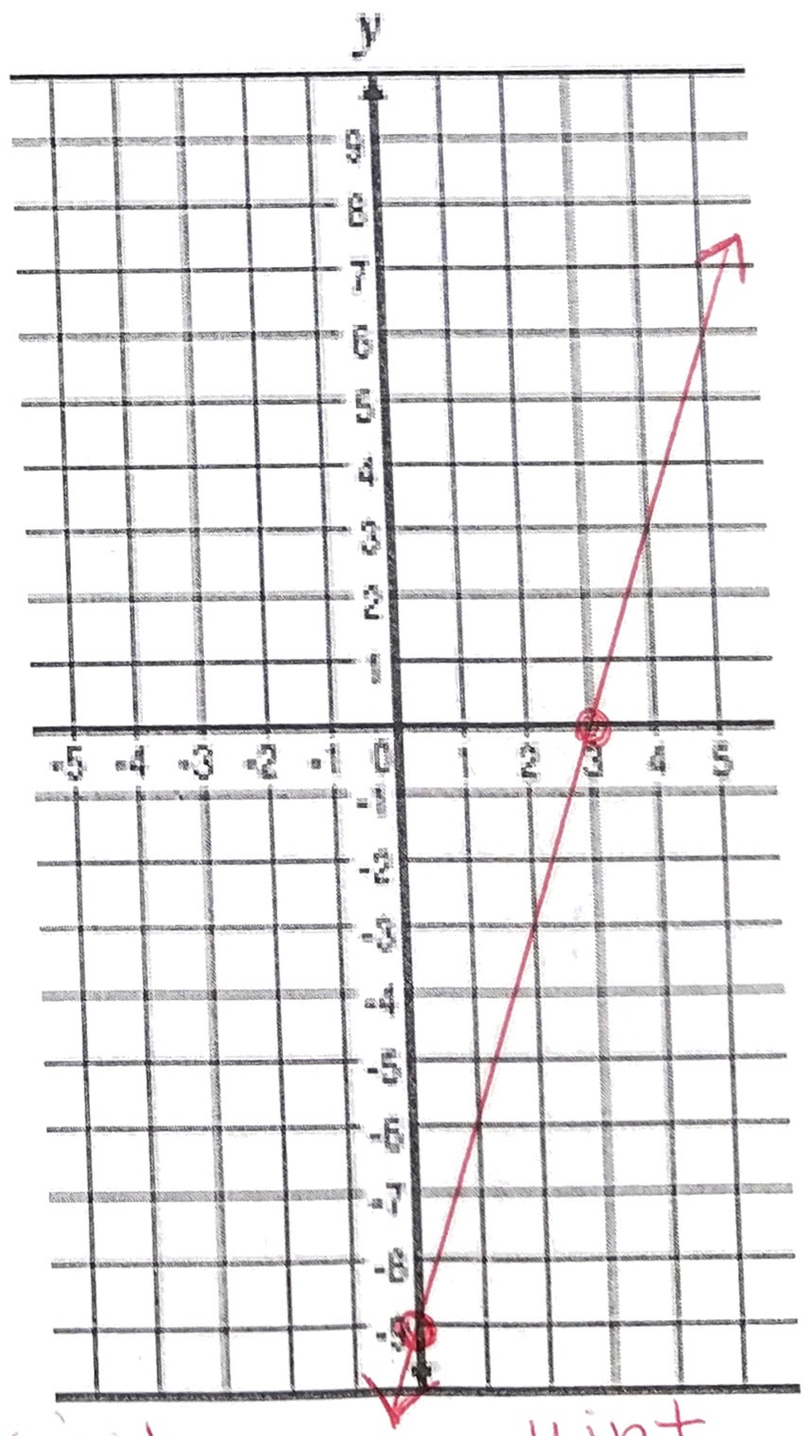
7) $x + 2y = 8$ x int = (8, 0) y int = (0, 4)



x int
$x + 2(0) = 8$
$x = 8$

y int
$0 + 2y = 8$
$\frac{2y}{2} = \frac{8}{2}$
$y = 4$

8) $3x - y = 9$ x int = (3, 0) y int = (0, -9)

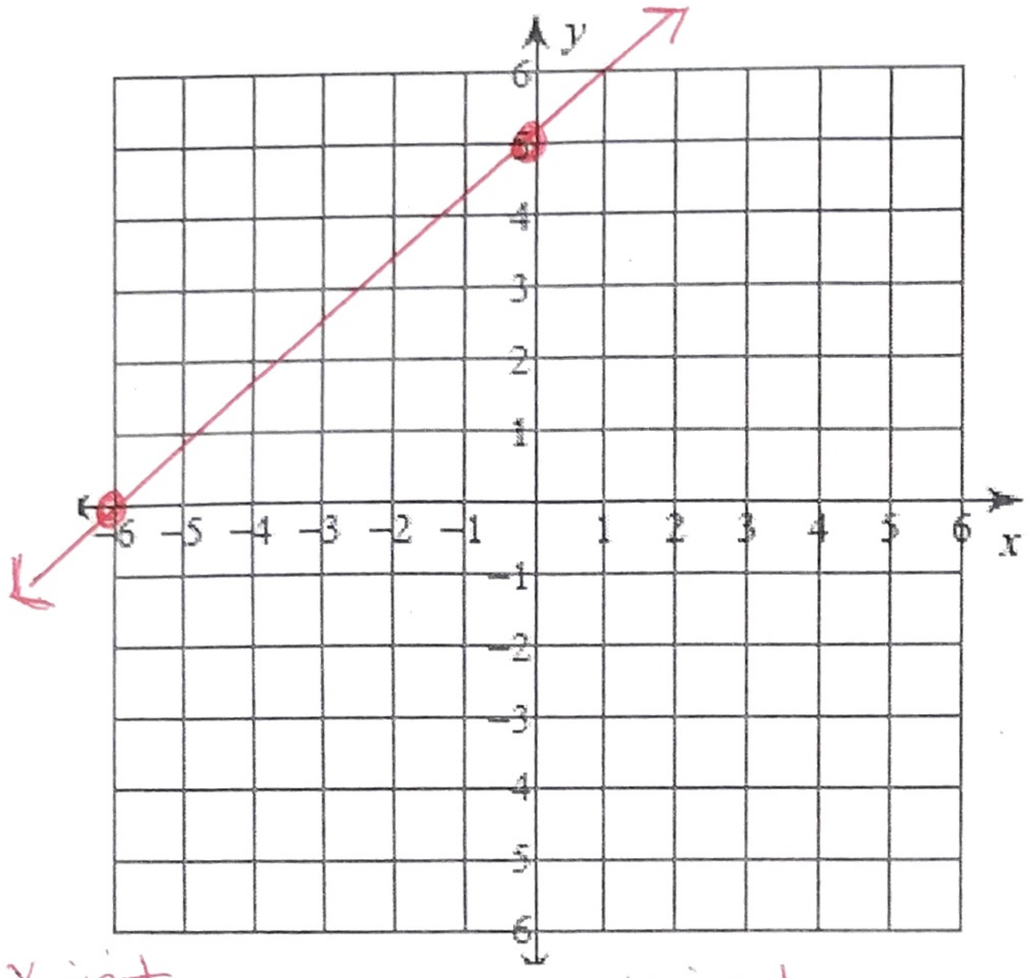


x int
$3x - 0 = 9$
$\frac{3x}{3} = \frac{9}{3}$
$x = 3$

y int
$3(0) - y = 9$
$\frac{-y}{-1} = \frac{9}{-1}$
$y = -9$

9) $-5x + 6y = 30$ x int = $(-6, 0)$ y int = $(0, 5)$

10) $-6x + 3y = -9$ x int = $(\frac{3}{2}, 0)$ y int = $(0, -3)$



x int

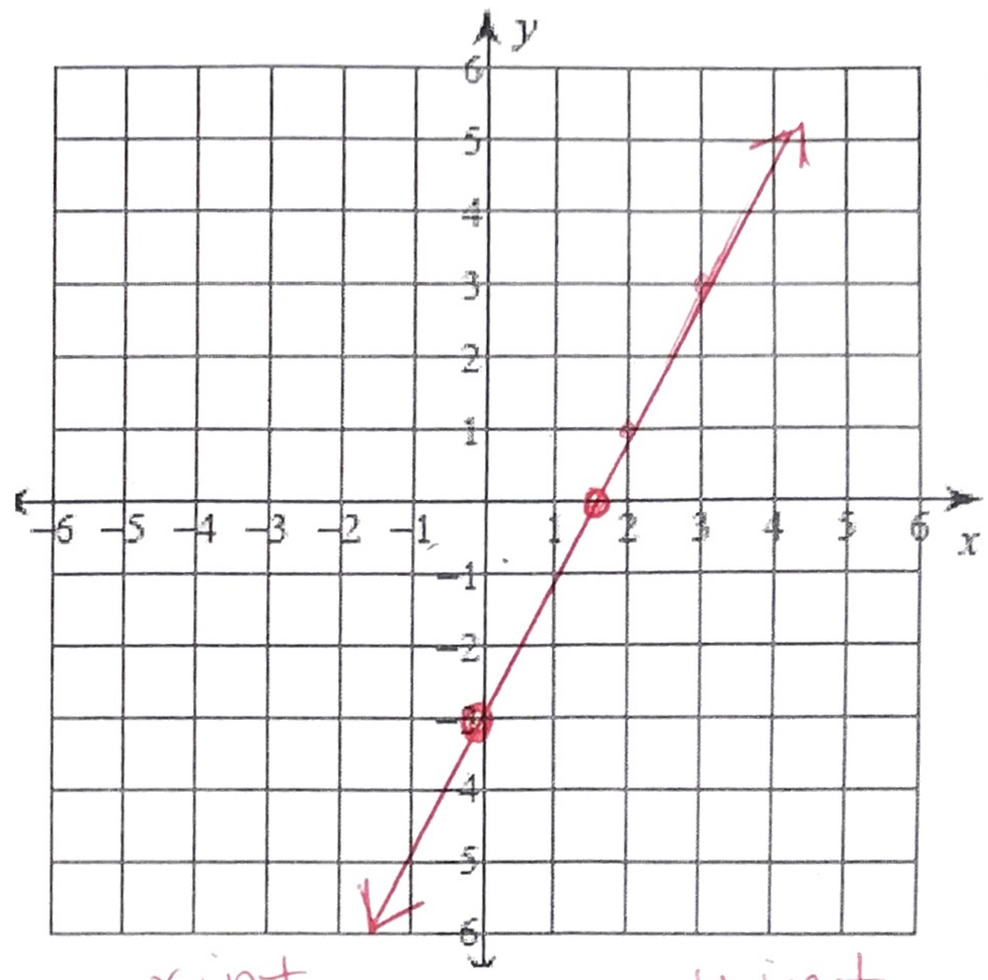
$\frac{-5x + 6(0) = 30}{-5 \quad -5}$

$x = -6$

y int

$\frac{-5(0) + 6y = 30}{6 \quad 6}$

$y = 5$



x int

$\frac{-6x + 3(0) = -9}{-6 \quad -6}$

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

y int

$\frac{-6(0) + 3y = -9}{3 \quad 3}$

$y = -3$

Change each equation to standard form (remember standard form has integers only).

x & y on same side, contant isolated tricky!

11) $y = 3x + 1$

$-3x \quad -3x$

$-3x + y = 1$

or

$3x - y = -1$

either answer is accepted

12) $y = 4x - 7$

$-4x \quad -4x$

$-4x + y = -7$

or

$4x - y = 7$

either is accepted

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

$-\frac{1}{2}x \quad -\frac{1}{2}x$

$2\left(-\frac{1}{2}x + y\right) = (-3)2$

$-x + 2y = -6$

or

$x - 2y = 6$

either is accepted

fractions aren't allowed so multiply both sides by the denom. (Remember to distribute!)