11. $y = \frac{1}{4}x + 9$

    $y = 4x - 9$

neither slopes are not the same - also not opposite reciprocal
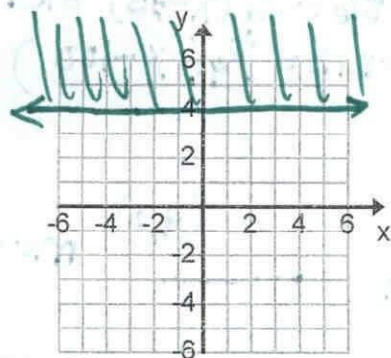
12. $y = 5 - \frac{1}{8}x$ $m = -\frac{1}{8}$

    $y = 8x + 2$ $m = 8$

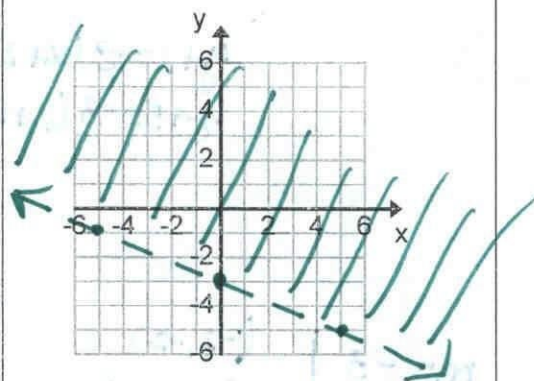*⊥ slopes are opp/reciprocal*

13. $-3x + 4y = 15$

    $9x - 12y = 24$

$m = 3/4$

$m = \frac{-9}{-12} = \frac{3}{4}$

‖ slopes are the same

Graph each inequality.
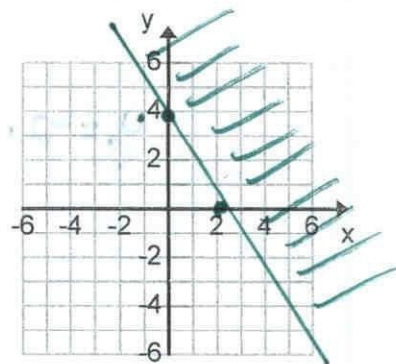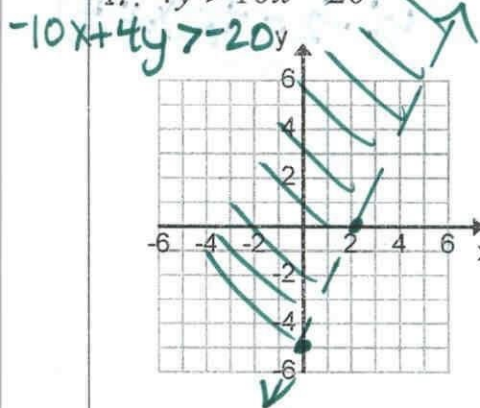
14. $y \geq 5$

15. $y > -\frac{2}{5}x - 3$

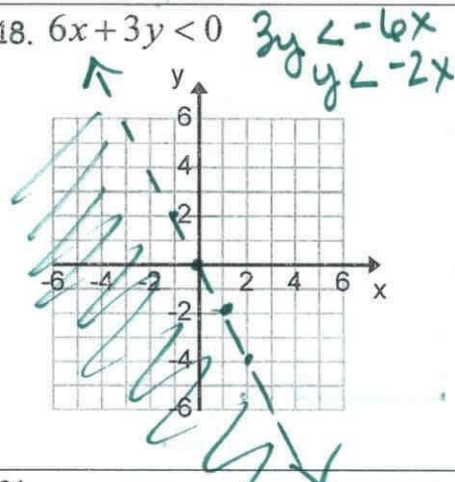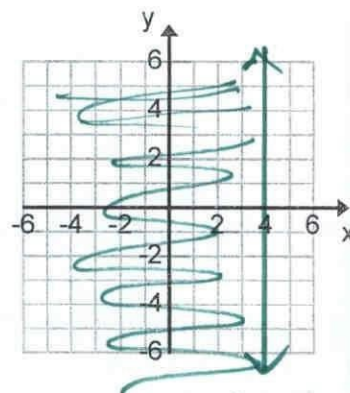16. $4x + 2y \geq 8$

17. $4y > 10x - 20$
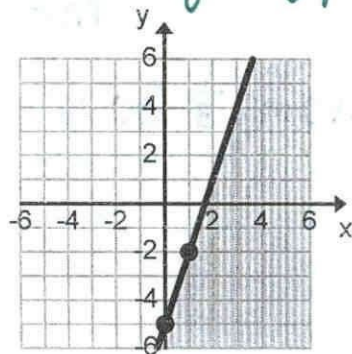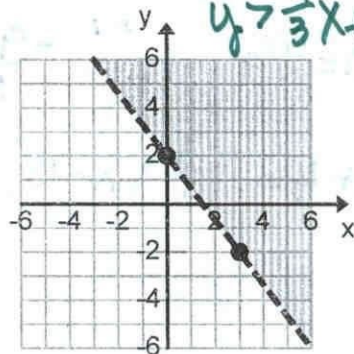
$-10x + 4y > -20$

18. $6x + 3y < 0$ *$3y < -6x$*

                $y < -2x$

19. $x \leq 4$

20. *$y \leq 3x - 5$*

21. *$y > \frac{-4}{3}x + 2$*

22. *$x \leq 3$*

#14 HW Writing Parallel & Perpendicular Linear Equations   Name___Key___
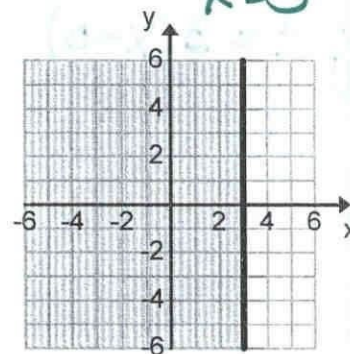
Algebra II

Write the equation for each line in point slope form. $(y-y_1) = m(x-x_1)$

1. line through (-5,7) and (3,-4)	2. line through (-4,7) and (-4,5)	3. line through

1. line through (-5,7) and (3,-4)

$m = \dfrac{-4-7}{3--5} = \dfrac{3}{8}$

$y-7 = \dfrac{3}{8}(x+5)$ or

$y+4 = \dfrac{3}{8}(x-3)$

2. line through (-4,7) and (-4,5)

$m = \dfrac{5-1}{-4-4} = \dfrac{5-7}{0}$

No slope

$\boxed{x = -4}$

3. line through

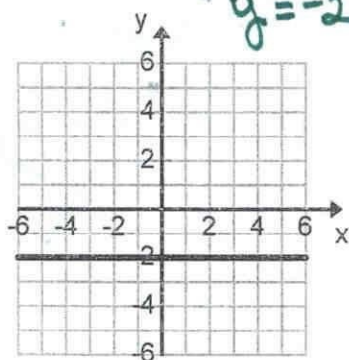| x	0	30	100
y	32	86	212

$m = \dfrac{30}{54} = \dfrac{5}{9}$

$y-32 = \dfrac{5}{9}(x-0)$ or

$y-86 = \dfrac{5}{9}(x-30)$ or

$y-212 = \dfrac{5}{9}(x-100)$

4. $y = -2$

5. $y+2 = -3(x+2)$
$y+5 = -3(x+1)$

$m = -3$ $(-2,-2)$
$(-1,-5)$

6.

$(4,2)$ $m = \dfrac{1}{6}$
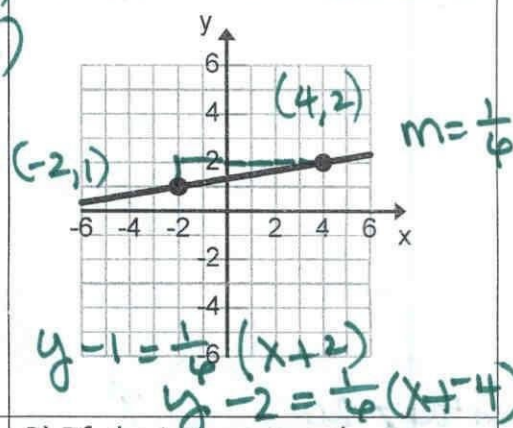$(-2,1)$

$y-1 = \dfrac{1}{6}(x+2)$
$y-2 = \dfrac{1}{6}(x+4)$
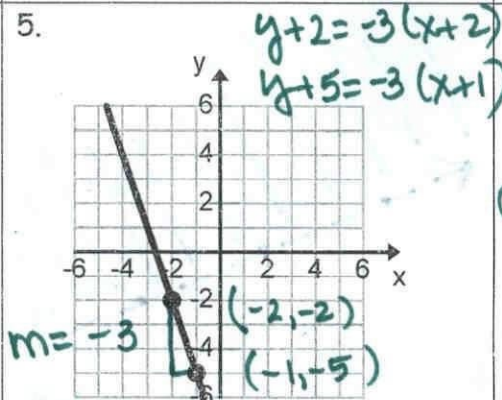
7. Each week Michelle record the average length of her standing long jump. Write an equation for the length of the long jump as a function of her number of weeks practicing.

Michelle's Long Jump	
Week (w)	Jump (cm)
1	175
2	178
3	181
4	181

B) If she improves at the same rate what will her jump length be by the 8th week?

Write the equation for each line in point slope form.

8. line parallel to $y = 3x+4$ through (0,9) and $m = 3$

$y-9 = 3(x-0)$

9. line through (0,-4) and perpendicular to $y = \dfrac{5}{9}x+4$

$m = 5/9$ $m = \dfrac{-9}{5}$

$y+4 = -\dfrac{9}{5}(x-0)$

10. perpendicular to $y = 3x$ through (6,-2). $m = 3$
$m = \dfrac{-1}{3}$

$y+2 = -\dfrac{1}{3}(x-6)$

Determine whether each pair of lines is parallel, perpendicular or neither, and Why or Why not.