P/S $y - y_1 = m(x - x_1)$
S/I $y = mx + b$

KEY

Name _____ Date _____

LESSON 5.3 Practice
For use with pages 302–308

Write an equation in point-slope form of the line that passes through the given point and has the given slope *m*. Give both P/S + S/I

1. $(1, 9)$; $m = -3$

P/S: $y - 9 = -3(x - 1)$

$y - 9 = -3x + 3$

$+9 \quad +9$

S/I: $y = -3x + 12$

2. $(4, -10)$; $m = 2$

P/S $y + 10 = 2(x - 4)$

$y + 10 = 2x - 8$

$-10 \quad -10$

S/I $y = 2x - 18$

3. $(-5, 6)$; $m = 4$

P/S $y - 6 = 4(x + 5)$

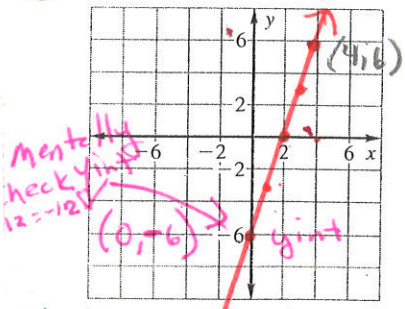
$y - 6 = 4x + 20$

$+6 \quad +6$

S/I $y = 4x + 26$

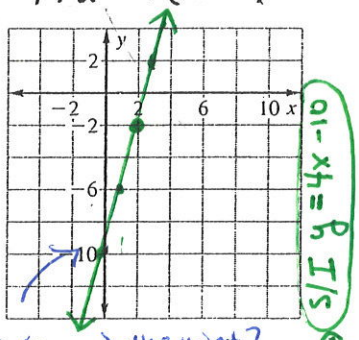
Graph the equation. then give S/I EQ

10. $y - 6 = 3(x - 4)$ $m = 3$ pt $(4, 6)$

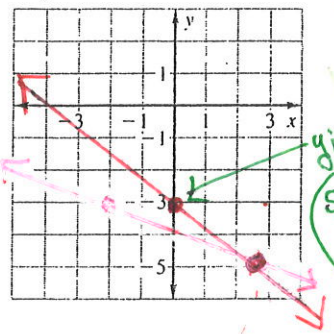


S/I: $y = 3x - 6$

11. $y + 2 = 4(x - 2)$ $m = 4$ pt $(2, -2)$



12. $y + 5 = -\frac{2}{3}(x - 3)$ $m = -\frac{2}{3}$ pt $(3, -5)$



Write an equation of the line that passes through the given points. FIND both P/S AND S/I.

13. $(-10, 7)$, $(5, -3)$

$m = \frac{\Delta y}{\Delta x} = \frac{7 + 3}{-10 - 5} = \frac{10}{-15} \rightarrow m = -\frac{2}{3}$

$m = \frac{-3 - 7}{5 + 10}$

P/S: pick pt 1:

$y - 7 = -\frac{2}{3}(x + 10)$

$y - 7 = -\frac{2}{3}x - \frac{20}{3}$

$+7 \quad +7 \quad (\frac{21}{3})$

S/I: $y = -\frac{2}{3}x + 1\frac{1}{3}$

OTHER P/S: $y + 3 = -\frac{2}{3}(x - 5)$

14. $(-8, 84)$, $(5, -46)$

$m = \frac{\Delta y}{\Delta x} = \frac{84 + 46}{-8 - 5} = \frac{130}{-13}$

$m = -10$

P/S: $y - 84 = -10(x + 8)$

$y - 84 = -10x - 80$

$+84 \quad +84$

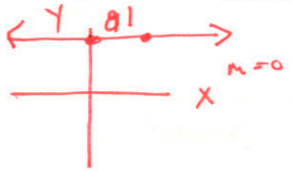
S/I: $y = -10x + 4$

OTHER P/S: $y + 46 = -10(x - 5)$

15 Write the EQUATION OF A HORIZONTAL LINE THROUGH THE POINT (9, 81)

Y

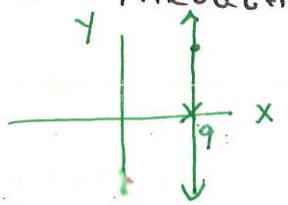
$y = 81$ ← EQ OF THE LINE



16 Write the EQUATION OF A VERTICAL LINE THROUGH (9, 81).

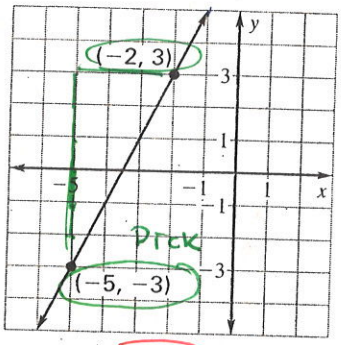
X

$x = 9$



Write an equation of the line shown. Use the right-hand point to write the equation. IN S/I.

19.



$M = \frac{6}{3} = 2$

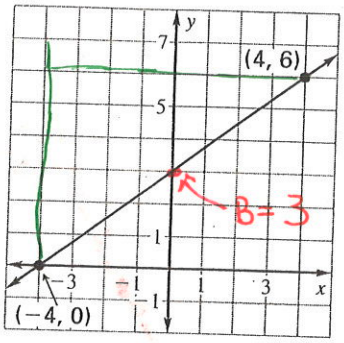
P/S * $y - 3 = 2(x + 2)$

$y - 3 = 2x + 4$

$+3 \quad +3$

$y = 2x + 7$

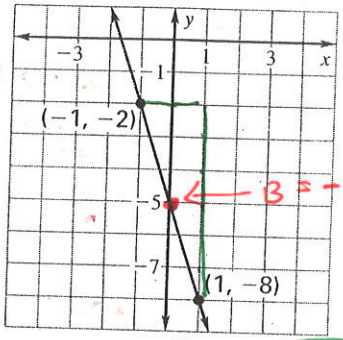
20.



$M = \frac{\text{Rise}}{\text{Run}} = \frac{6}{8}$ $M = \frac{3}{4}$

$y = \frac{3}{4}x + 3$

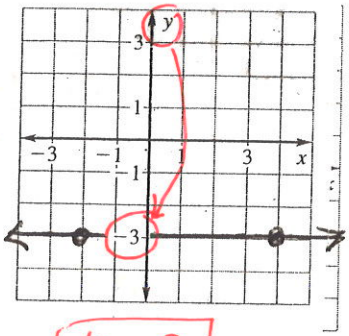
21.



$M = \frac{6}{-2}$ $M = -3$

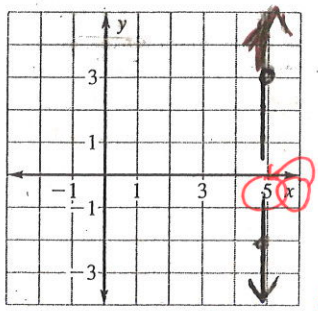
$y = -3x - 5$

22.



$y = -3$

23.



$x = 5$