

THIRD FORM OF A LINEAR EQUATION.

"Specialist" $\Rightarrow$ NOT USED AS OFTEN AS
THE STANDARD FORM OR
"SLOPE-INTERCEPT" FORM, BUT
IT IS VERY USEFUL IF YOU
KNOW ONE POINT AND THE SLOPE

$$y - y_1 = m(x - x_1)$$



A POINT YOU KNOW (x_1, y_1)

NAME: POINT-SLOPE FORM

EXAMPLE: FIND EOL THROUGH $(7, 3)$, m IS 4

$$\boxed{y - 3 = 4(x - 7)} \leftarrow \text{ANS.}$$

NOTE: THIS P-S FORM WILL "LOOK" DIFFERENT FOR
ANY POINT YOU USE, BUT IF YOU "SOLVE
FOR y ", WILL BE SAME LINE.

(2)

Solve for y:

$$y - 3 = 4(x - 7)$$

$$y - 3 = 4(x - 7)$$

$$y - 3 = 4x - 28$$

$$\begin{array}{ccc} +3 & & +3 \end{array}$$

S-I Form $\boxed{y = 4x - 25}$

ANOTHER POINT
ON THIS LINE

LET'S TRY ANOTHER P-S Form, SAY

$$(6, -1), m = 4$$

$$y - y_1 = m(x - x_1)$$

$$y - (-1) = 4(x - 6)$$

$$\boxed{y + 1 = 4(x - 6)} \quad \text{P-S Form}$$

Solve
for y

$$\begin{array}{ccc} y + 1 = 4x - 24 \\ -1 & & -1 \end{array}$$

$$\boxed{y = 4x - 25} \quad \checkmark \text{ SAME LINE}$$

PRACTICE WRITING P-S Form:

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<u>GIVEN POINT</u>	<u>m</u>	<u>P-S-Form</u>
(x, y)	SLLOPE	$y - y_1 = m(x - x_1)$
$(3, 6)$	2	$y - 6 = 2(x - 3)$
$(4, 5)$	8	$y - 5 = 8(x - 4)$
$(-2, 6)$	4	$y - 6 = 4(x + 2)$
$(-1, 3)$	$\frac{2}{3}$	$y - 3 = \frac{2}{3}(x + 1)$

Summary

$$Ax + By = C$$

S.F.

$$y = mx + b$$

S-I.F.

$$y - y_1 = m(x - x_1)$$

P-S.F.

HW: DUE FRIDAY $\Rightarrow$ Pg 313 Ch 5 Practice Test