DO NOW

Pick up Worksheet - HW 3.1
Chapter 3 Introduction.
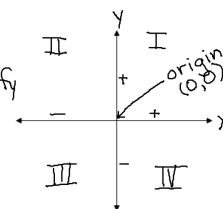
Complete this worksheet. Please
follow directions carefully.

3.1 Graphing Linear Equations

coordinate plane - plane determined by the
x-axis and y-axis.

quadrants - named using Roman numerals.

axes - plural of axis - lines
↳ must label with numbers
and as x or y
ordered pair - is used to identify
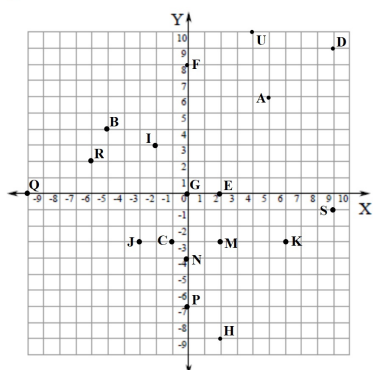a point in the
coordinate plane.
(x, y)
↑ ↑ ordinate
abscissa

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Linear equation - equation where no exponent on a
variable is higher than 1.
standard form: $Ax + By = C$ where A, B and C are #'s
★ adding x and y → never multiplying x and y
◆ forms a line when graphed
↳ That line represents all ordered pairs
that are solutions to the equation.

• If an ordered pair makes an equation true,
it is a solution to the equation.
• If it is a solution to the equation,
it is on the graph of the equation (line).
★ When asked if a point is on the line,
it means is it a solution.

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1. Does the point (2, -3) lie on the graph of $x - 2y = -4$?
★ They are asking is (2,-3) a solution for $x - 2y = -4$.

$$\begin{array}{c|c} x - 2y & -4 \\ \hline 2 - 2(-3) & -4 \\ 2 + 6 & -4 \\ 8 & -4 \end{array}$$
X

No, this point does
not lie on the graph.

2. Find the unknown coordinate
for (x, 5) on the line:
$3x + 2y = 22$.
★They want you to find x
when y = 5.
$3x + 2(5) = 22$
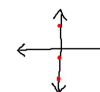$3x + 10 = 22$
$3x = 22 - 10$
$3x = 12$
$x = \frac{12}{3}$
$\boxed{x = 4}$

3. Find the value of k so that
the point (5, -3) will be on
the line $x - y = k$.
★They want you to find k
when x = 5 and y = -3.
$5 - 3 = k$
$5 + 3 = k$
$\boxed{8 = k}$

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y - intercept: y-coordinate where the graph
crosses the y-axis

★★★★ $\boxed{x = 0}$

x - intercept: x-coordinate where the graph
crosses the x-axis

★★★★★ $\boxed{y = 0}$

Example: Find the *x* and *y* intercepts for the linear equations.

4. $5x + 2y = 6$

$\underline{\text{x-intercept} \rightarrow y=0}$

$5x + 2(0) = 6$

$5x + 0 = 6$

$5x = 6$

$\boxed{x = \frac{6}{5}}$

$\underline{\text{y-intercept} \rightarrow x=0}$

$5(0) + 2y = 6$

$0 + 2y = 6$

$2y = 6$

$y = \frac{6}{2}$

$\boxed{y = 3}$

5. $2y + x = 5$

$\underline{\text{x-intercept} \rightarrow y=0}$

$2(0) + x = 5$

$0 + x = 5$

$\boxed{x = 5}$

$\underline{\text{y-intercept} \rightarrow x=0}$

$2y + 0 = 5$

$2y = 5$

$\boxed{y = \frac{5}{2}}$

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HOMEWORK

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Linear Equations

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