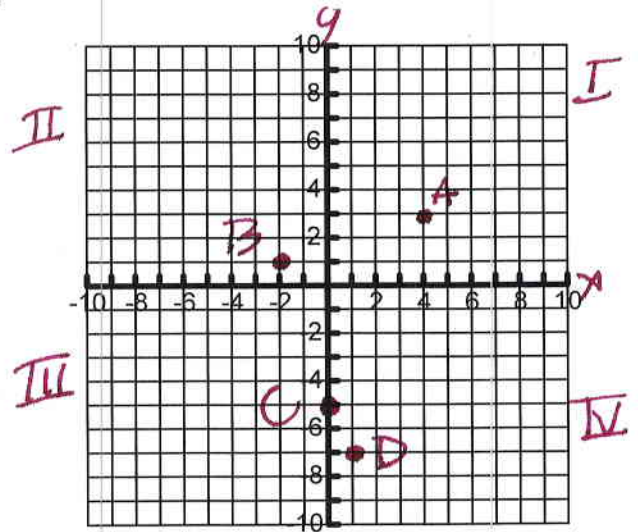


Instructions: Show all work. If you are using your calculator to solve, you may sketch a graph or indicate keys pressed to show work. Exact values: do not use decimals in your answers unless the problem begins with decimals, or is a word problem, or unless specifically asked to round. All answers should be fully reduced for full credit. Draw diagrams to help organize the data (this is worth partial credit). If you do your work on scrap paper, you should indicate that directly on the test paper along with your final answer. It is preferable, if you can, to do work directly on the test paper.

- Plot the points A(4,3), B(-2,1), C(0,-5), D(1,-7), on the graph. Label each quadrant and both axes. Label each point.



- Solve the inequality $\frac{1}{2}(x - 4) > x + 8$ and write its solution in set notation, and in interval notation.

$$\begin{array}{r}
 x - 4 > 2x + 16 \\
 -2x \quad -2x \\
 \hline
 -x - 4 > 16 \\
 +4 \quad +4 \\
 \hline
 -x > 20 \Rightarrow x < -20
 \end{array}$$

i) set $\{x \mid x < -20\}$
 ii) interval $(-\infty, -20)$

- Two boats leave a port at the same time, one going northbound and one going southbound. The northbound boat travels 16 mph faster than the southbound boat. If the southbound boat is traveling at 47 mph, how long will it be before they are 1430 miles apart?

$$\begin{array}{l}
 \uparrow r + 16 = 63 \\
 \downarrow r = 47
 \end{array}$$

$$\begin{array}{r}
 \text{distance total} = 63t + 47t \\
 = 1430 \qquad = 110t \\
 \hline 110 \qquad \hline 110
 \end{array}$$

$t = 13$ hours