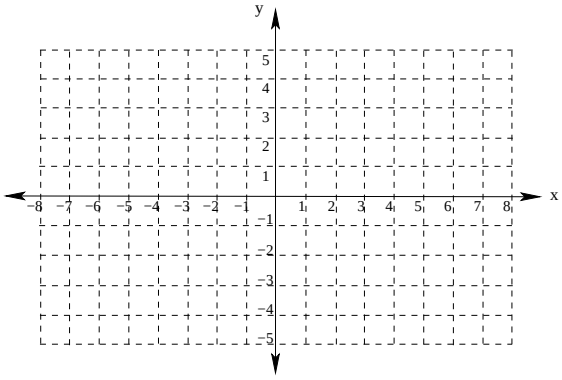
Math 229
First Day Activity
05/28/2008

Instructions: Work the following problems in groups of 3-4 students. You will have about 20 minutes to complete the problems on this side of the worksheet before we come back together to discuss them.

1. Given the points $P : (2, -3)$ and $Q : (-4, 5)$

   (a) Graph P and Q on the axes provided



   (b) Find $d(P, Q)$

   (c) Find the equation for a circle with center P and passing through the point Q.

   (d) Find the slope of the line segment $\overline{PQ}$.

   (e) Find the coordinates of the midpoint M of $\overline{PQ}$ and graph it on the axes above.

   (f) Find the equation of the line $\overleftrightarrow{PQ}$ and graph it on the axes above.

   (g) Find the equation of the line through M and perpendicular to $\overleftrightarrow{PQ}$ and graph it on the axes above.

2. Graph each of the following lines on the axes provided. Label each line using its "letter".

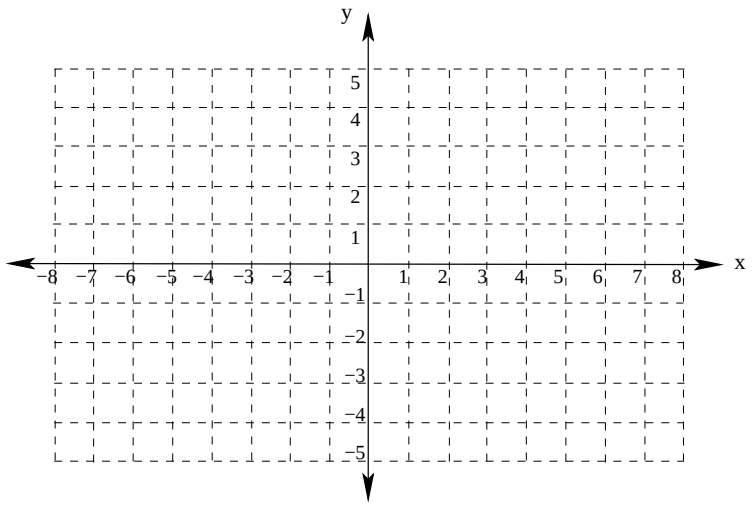
(a) $y = x$

(b) $y = \frac{1}{2}x$

(c) $y = -3x$

(d) $y = 3$

(e) $x = 3$



3. Given $P : (-1, 2)$ and $Q : (3, 5)$

(a) Find the equation of the line $\overleftrightarrow{PQ}$.

(b) Find the equation of the line through the origin and parallel to $\overleftrightarrow{PQ}$.

(c) Find the equation of the horizontal line containing P.

(d) Find the equation of the vertical line containing Q.