Complex Analysis

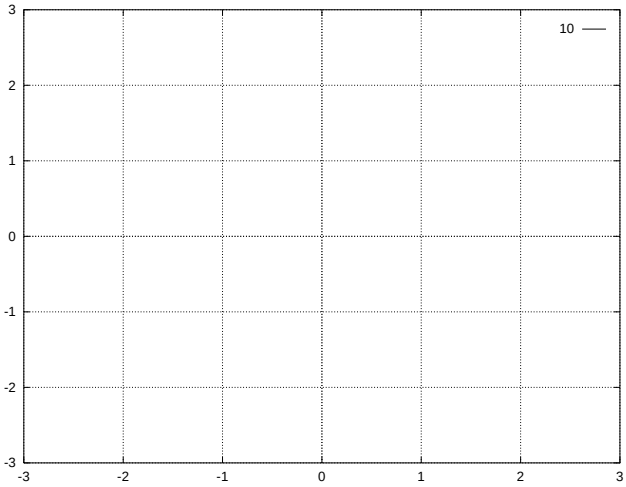
Math 214 Spring 2004 Fowler 112 MWF 3:30pm - 4:25pm

 http://faculty.oxy.edu/ron/math/312/04/

Class 2: **Friday January 23**

SUMMARY Graphical Representations of Complex Numbers and Inequalities
READING Saff & Snider, Section 1.2
HOMEWORK Saff & Snider, Section 1.2 # 1, 4, 5, 7, 11, 16, **Extra Credit: 21**

Consider two complex numbers $z_1 = 3 + 0.5i$ and $z_2 = -1 - 2i$
Draw an *Argand diagram* depicting these two complex numbers in the complex plane. What physical quantity do $|z_1|$ and $|z_2|$ represent in the diagram?



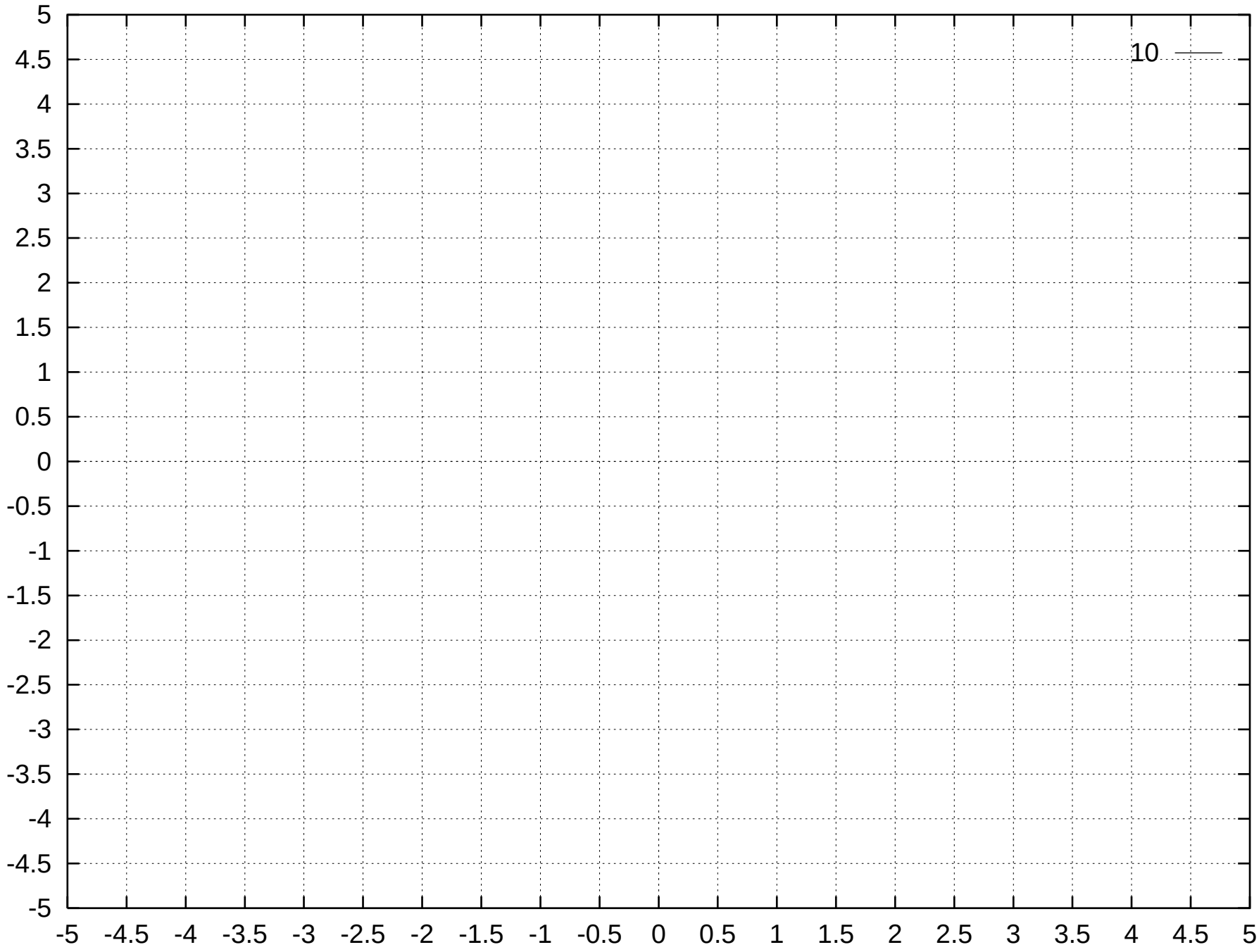
Then draw in vectors that represent the complex numbers $z_1 + z_2$ and $z_1 - z_2$
Indicate what the value of $|z_1 + z_2|$ is. If I had two points at (3,0.5) and (-1,-2) what would the distance between these two points be?

GROUPWORK

Consider the equation $|z - 2 + i| = 2$.
What curve does this equation represent in the complex plane?

Consider the equation $2 = \text{Re}\,(\bar{z} - i)$
What curve does this equation represent in the complex plane?

Sketch the set of points which solve these equations on the grid provided.


10
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
-3.5
-4
-4.5
-5
-5 -4.5 -4 -3.5 -3 -2.5 -2 -1.5 -1 -0.5 0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5