BECA / Dr. Huson / Geometry 06-Analytic-geometry Name:
pset ID: 91

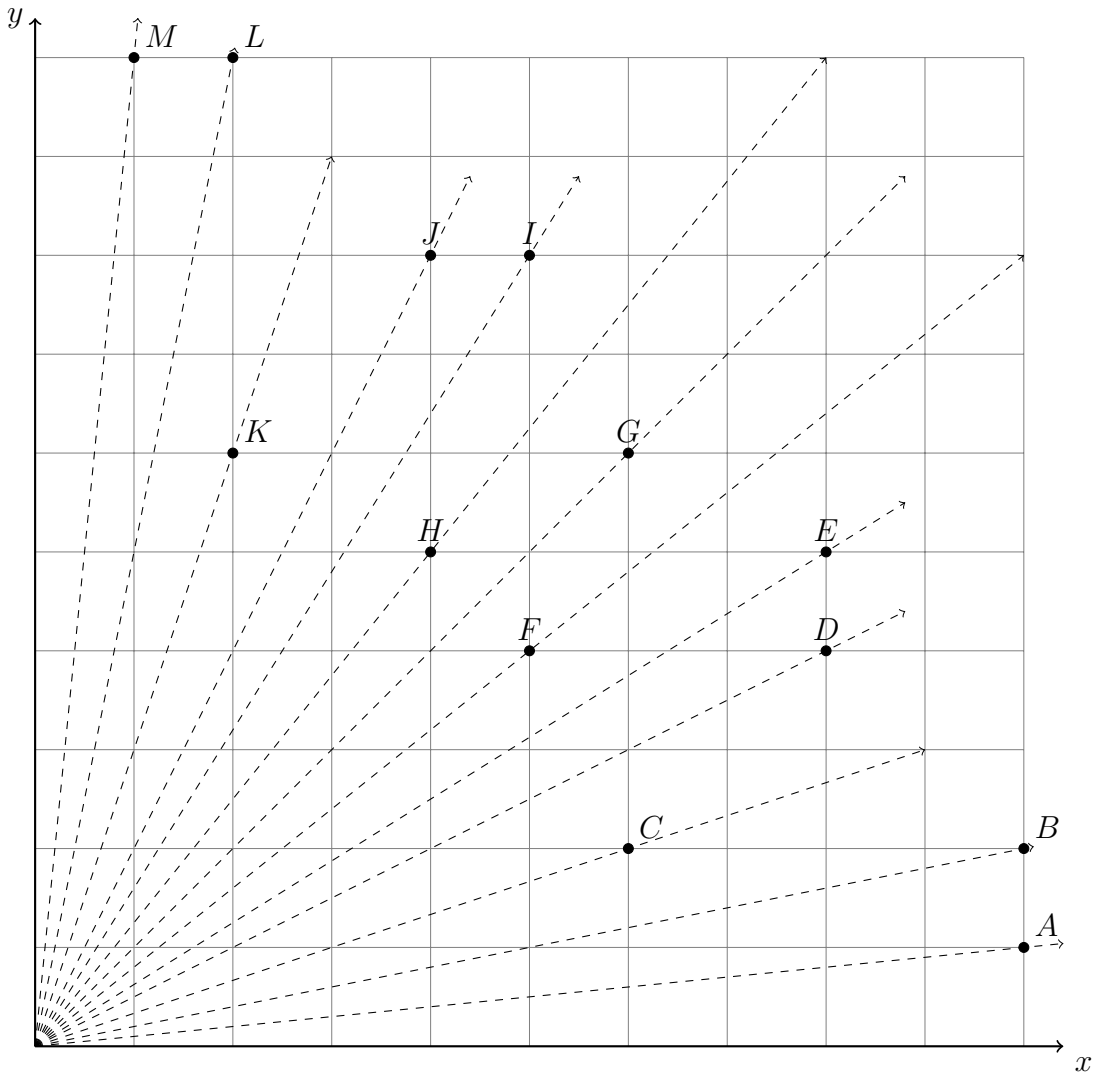
6-8DN-Euclids-orchard

1. This diagram is an example of what is called "Euclid's Orchard" representing integer coordinate pairs viewed from the origin.

   (a) Replicate the points and angles below onto page 3.

   (b) Complete the table of values on page 2 by measuring the angles with a protractor.

   (c) Use your table to answer the questions on page 4.



Complete the table mapping slopes to angle measures

Point	x	y	slope m	angle measure θ
A	10	1	0.1	6°
B				
C				
D				
E				
F				
G				
H				
I				
J				
K				
L				
M				

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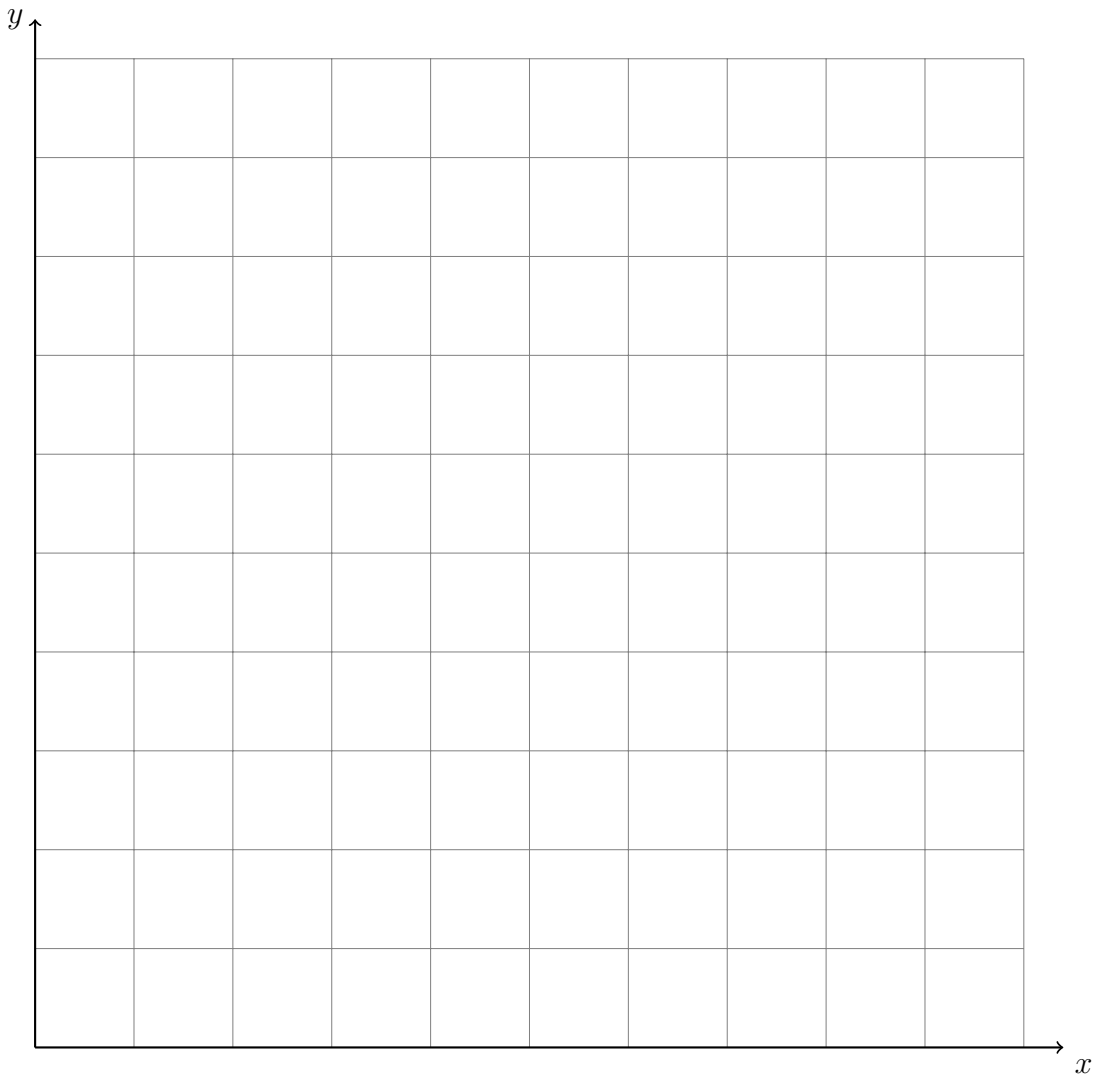
2. Add points and vertex angles to the grid below, labeling them as was done on the first page. Then complete the table on page 2, as follows:
   (a) Write down the x and y coordinates of the point;
   (b) Calculate the slope, "rise over run", as a decimal to the nearest thousandth;
   (c) Measure the angle, θ, made with the origin and x-axis, as shown for point A.



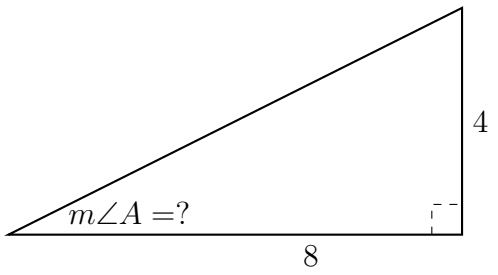
Use your table of slopes and angles to answer the following questions.

3. A line intersects the x-axis at the origin at an angle of $18°$. What is it's slope?

4. A line intersects the x-axis at the origin at an angle of $63°$. What is it's slope?

5. A line through the origin has a slope of 1. What angle does it make with the x-origin?

6. Right $\triangle ABC$ has a base of length 8 and height 4. What is the measure of the vertex $\angle A$?



7. Right $\triangle DEF$ has a base of length 4 and height h. The measure of the vertex $\angle D = 51°$. Find the height, $h = ?$.