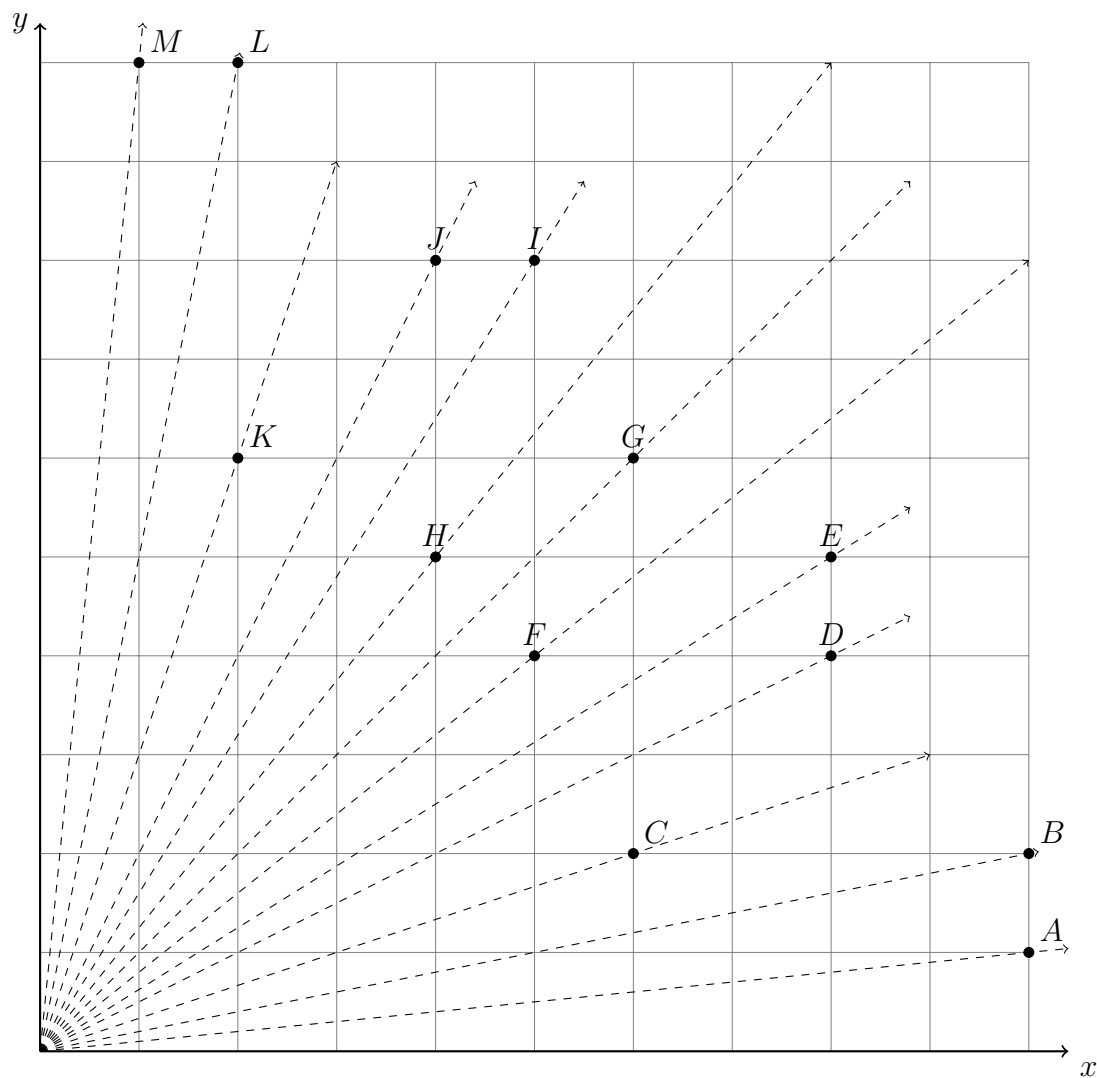


**6.8 Do Now: Euclid's Garden, mapping angles to slope**

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.



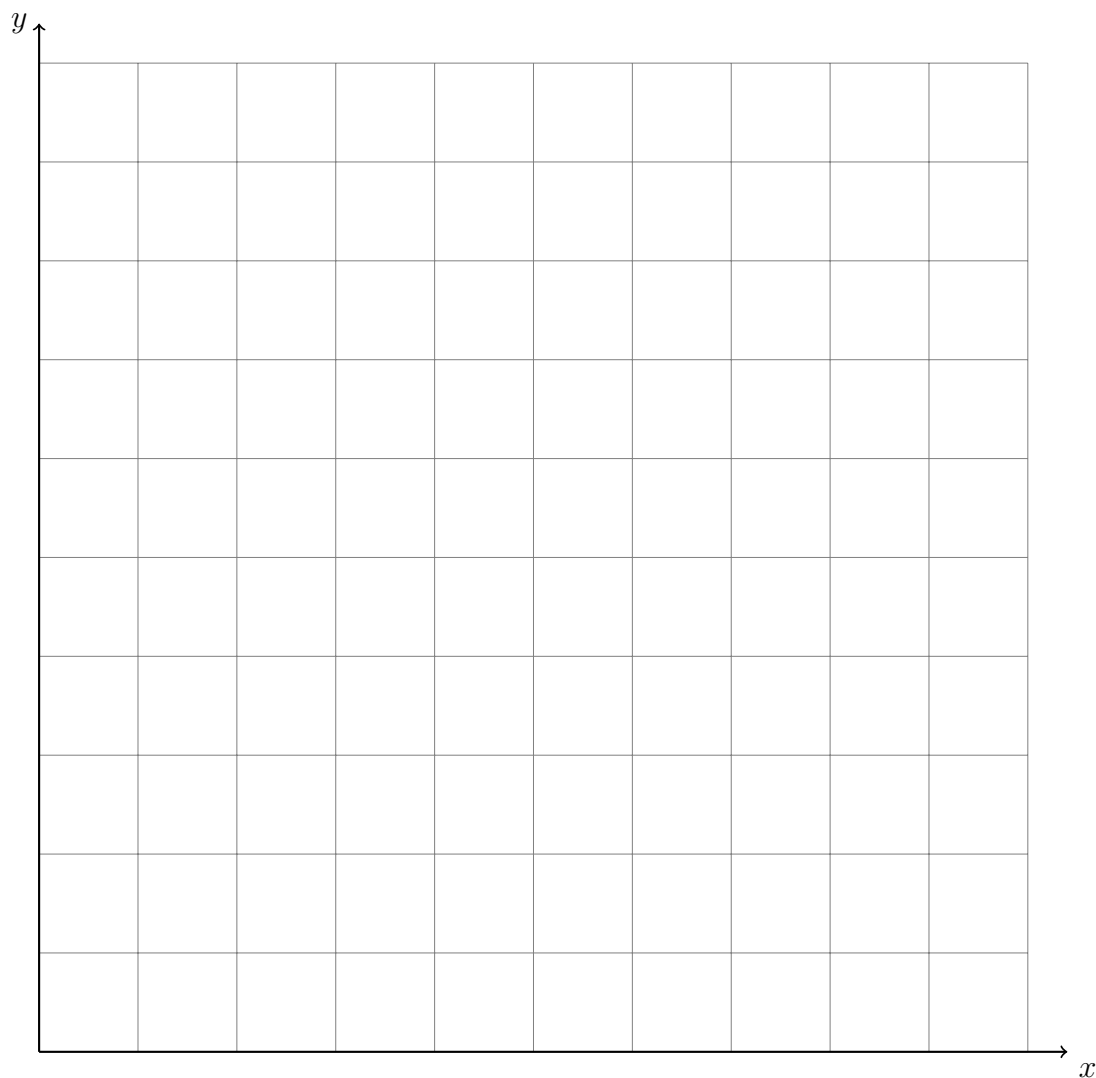
Complete the table mapping slopes to angle measures

Point	$x$	$y$	slope $m$	angle measure $\theta$
$A$	10	1	0.1	$6^\circ$
$B$				
$C$				
$D$				
$E$				
$F$				
$G$				
$H$				
$I$				
$J$				
$K$				
$L$				
$M$				

Name:

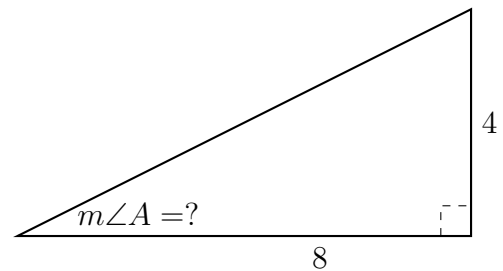
2. Add points and vertex angles to the grid below, labeling them as was done on the first page. Then complete the table on page 2, as follows:

- (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,  $\theta$ , 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  $18^\circ$ . What is its slope?
4. A line intersects the  $x$ -axis at the origin at an angle of  $63^\circ$ . What is its 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  $\angle D = 51^\circ$ . Find the height,  $h = ?$ .

