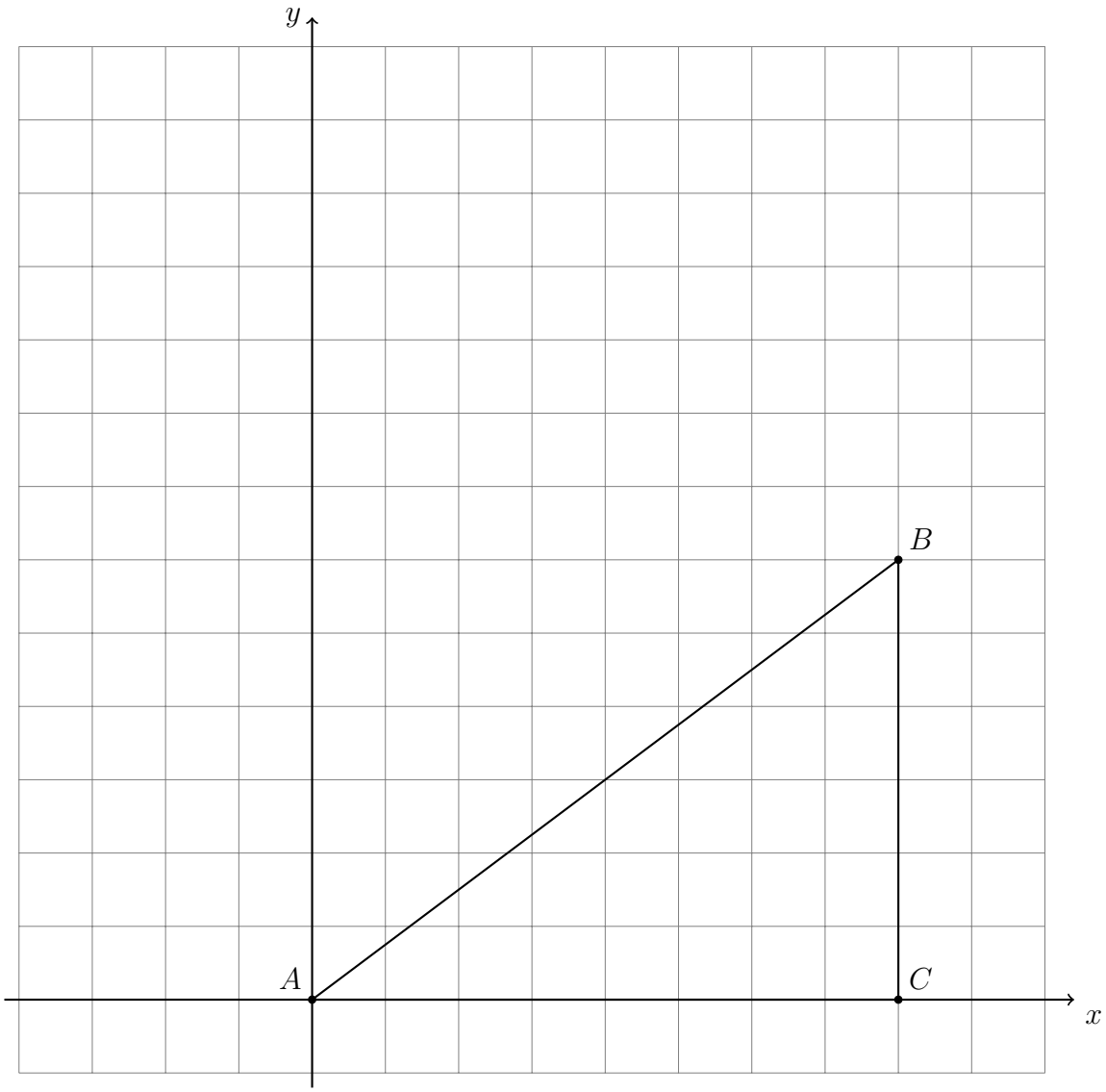
**6.8 Do Now: Euclid's Garden, mapping angles to slope**

1. Below, right $\triangle ABC$ is shown in standard position with $A(0,0)$, $B(8,6)$, and $C(8,0)$.

   Measure the lengths of the sides of the triangle in centimeters and mark them on the diagram.




   (a) Mark the vertex of another right triangle in standard position, $D(5,12)$.

   (b) Mark the point $E$ on the $x$-axis such that $\overline{AE} \perp \overline{DE}$.

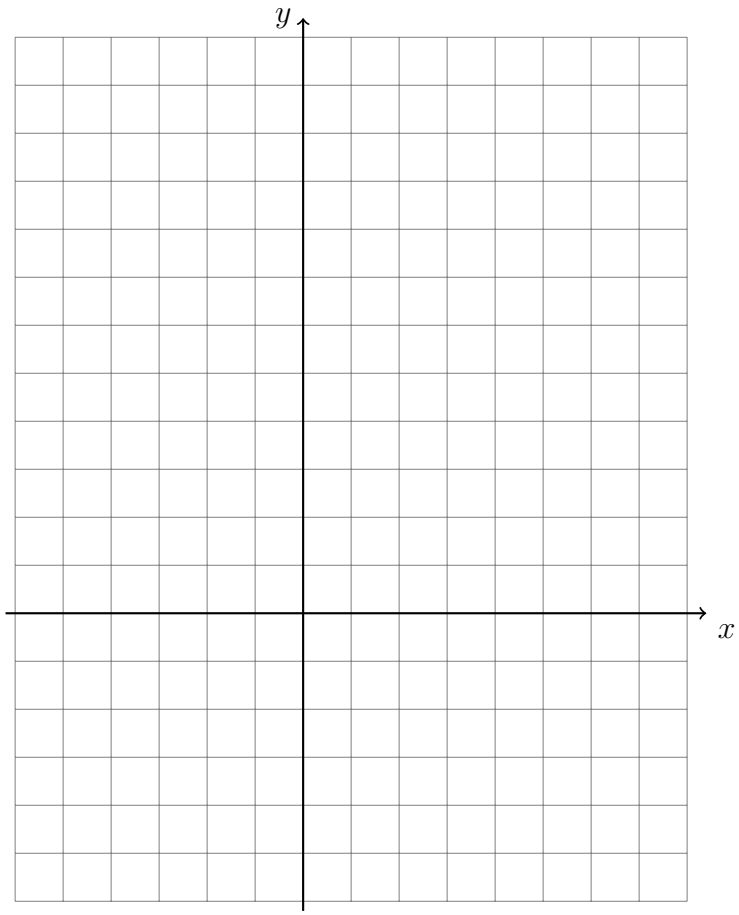
   (c) Measure and mark the dimensions of $\triangle ADE$ on the graph.

2. Complete the t-chart for $x = -3, -2, -1, 0, 1, 2, 3$, then graph and label the function on the grid below, labeling the vertex on the graph as an ordered pair.

   Use pencil for graphs. Draw parabolas as smooth curves.

$$f(x) = x^2$$

| $x$ | $f(x)$ | $g(x)$ |
|---|---|---|
| | | |




(a) The parabola is translated two units up, $f \to g$.

Draw the parabola $g(x)$ on the graph, marking and labeling its vertex.

(b) Complete the t-chart values for $g(x)$.

(c) What is the equation of $g(x)$?