# Construction Techniques 4: Parallel and Perpendicular Lines

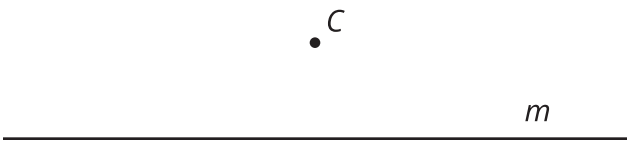
Let's use tools to draw parallel and perpendicular lines precisely.

## 6.1 Construction Catalog

1. On the paper provided, complete the construction assigned to you.
2. Look at all 4 constructions. What else do you think you can construct using these techniques?

## 6.2 Standing on the Shoulders of Giants

Here is a line $m$ and a point $C$ *not* on the line. Use straightedge and compass moves to construct a line perpendicular to line $m$ that goes through point $C$. Be prepared to share your reasoning.



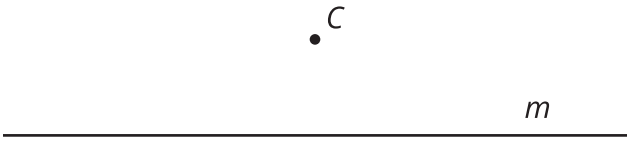
### Are you ready for more?

1. The line segment $AB$ has a length of 1 unit. Construct its perpendicular bisector. Mark the point $C$ where this line intersects segment $AB$. How far is this new point from $A$?
2. Choose a pair of points to construct a new perpendicular bisector that has not been drawn yet, and label its intersection with segment $AB$. How far is this new point from $A$?
3. If you repeat this process of drawing new perpendicular bisectors and considering how far your point is from $A$, what can you say about all the distances?




## 6.3 Parallel Constructions Challenge

Here is a line $m$ and a point $C$ not on the line. Use straightedge and compass moves to construct a line parallel to line $m$ that goes through point $C$.



## Lesson 6 Summary

When we write the instructions for a construction, we can use a previous construction as one of the steps. We now know two new constructions that are made up of a sequence of moves:

- Perpendicular lines are lines that meet at a 90 degree angle.
- Parallel lines are lines that don't intersect. One way to make parallel lines is to draw 2 lines perpendicular to the same line.

