So Many Flags

Task Statement 1

The Constitution of Nepal includes instructions for constructing the flag.

Step 1: Draw a line segment AB of the required length. Segment AB will be the bottom edge of the flag.

Step 2: Draw a line segment AC perpendicular to segment AB so that the length of segment AC is $\frac{4}{3}$ the length of segment AB.

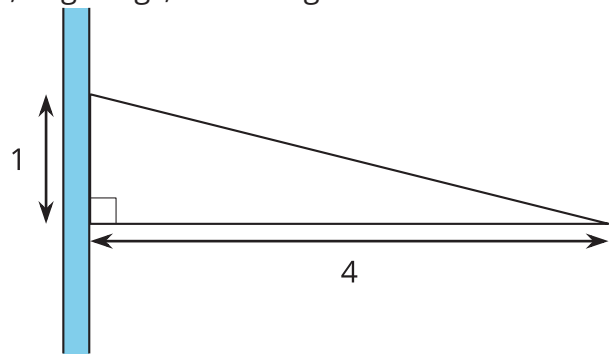
Step 3: Mark point D on line segment AC so that segment AD is the same length as segment AB. Then join points B and D with a line segment.

Step 4: Mark point E on line segment BD so that segment BE is the same length as segment AB.

Step 5: Draw a line segment, FG, that goes through point E and is parallel to and the same length as segment AB. Point F should be on line segment AC.

Step 6: Join points C and G, with a line segment.

1. a. Construct the flag according to the instructions. You can make it any size you want.
   b. Find the measurement of each angle in the flag.
2. Imagine there is a parade featuring the flag of Nepal. There are small flags and large flags in the parade. Decide on the size of each type of flag.
   a. How much material is needed to make each type of flag?
   b. If the border of a flag is made by sewing a ribbon along its edge, how long is the ribbon for each type of flag?
3. Imagine a parade featuring a flag that is meaningful to you. (Choose a flag or design your own.) At the parade, there are small flags, large flags, and triangular banners such as this:
   a. How can you adapt your flag to fit on the triangular shape?
   b. How much material of each color do you need for each kind of flag?



So Many Flags

Task Statement 2

The Constitution of Nepal includes instructions for constructing the flag.

Step 1: Draw a line segment AB of the required length. Segment AB will be the bottom edge of the flag.

Step 2: Draw a line segment AC perpendicular to segment AB so that the length of segment AC is $\frac{4}{3}$ the length of segment AB.

Step 3: Mark point D on line segment AC so that segment AD is the same length as segment AB. Then join points B and D with a line segment.

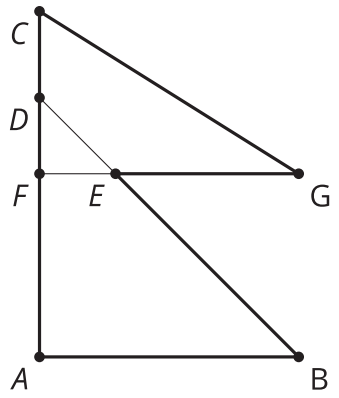
Step 4: Mark point E on line segment BD so that segment BE is the same length as segment AB.

Step 5: Draw a line segment, FG, that goes through point E and is parallel to and the same length as segment AB. Point F should be on line segment AC.

Step 6: Join points C and G, with a line segment.

1. Clare is constructing the flag, and she starts with segment AB of length 6 inches.

   Here is her finished flag shape. Use the instructions to fill in as many lengths and angles as you can.



2. Imagine there is a parade featuring the flag of Nepal. There are small flags and large flags. Decide on the size of one type of flag.
   a. How much material is needed to make the flag?
   b. If the border of a flag is made by sewing a ribbon along its edge, how long is the ribbon?

3. Imagine a parade featuring a flag that is meaningful to you. (Choose a flag or design your own.) At the parade, there are rectangular flags, and triangular banners such as this:

   a. How can you adapt your flag to fit on the triangular shape?

   b. How much material of each color is needed for each kind of flag?