

So Many Flags

The constitution of Nepal includes instructions for constructing the flag. Here are the instructions:

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

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

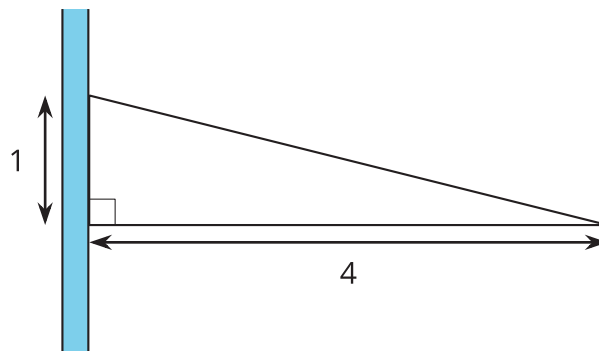
Step 3: Mark the point D on the line AC so that AD is the same length as AB . Then join the points D and B with a straight line.

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

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

Step 6: Join the points C and G with a straight line.

- Construct the flag according to the instructions. You can make it any size you want.
 - Find the measure of each of the angles in the flag.
- Imagine that there will be a parade featuring the flag of Nepal. For the parade there will be small flags and large flags. Decide what the sizes of each type of flag should be.
 - How much material would you need to make each type of flag?
 - If you made the border of the flags by sewing a ribbon along the edge, how long would the ribbon have to be for each type of flag?
- Imagine that there will be a parade featuring a flag that is meaningful to you. (Choose a flag or design your own.) At the parade there will be small flags, large flags, and triangular banners like this:



- a. How will you adapt your flag to fit on the triangular shape?
- b. How much material of each color will you need for each kind of flag?

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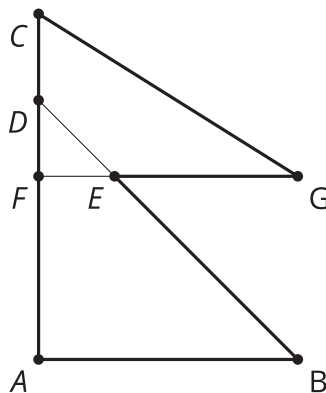
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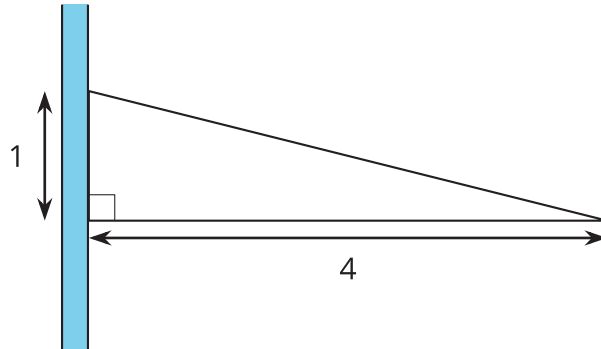
Step 6: Join the points C and G with a straight line.

1. Clare is constructing the flag and she starts with 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 that there will be a parade featuring the flag of Nepal. For the parade there will be small flags and large flags. For one of those types, decide how big it should be.
 - a. How much material would you need to make the flag?
 - b. If you made the border of the flag by sewing a ribbon along the edge, how long would the ribbon have to be?

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



- How will you adapt your flag to fit on the triangular shape?
- How much material of each color will you need for each kind of flag?