

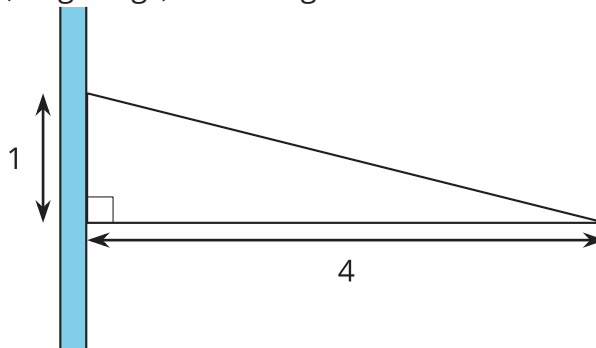
# So Many Flags



## 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



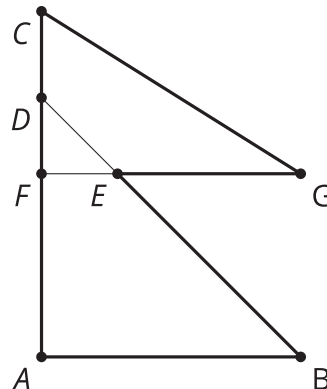
## Task Statement 2

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?

