Indirect measurement worksheet

You decide that the height of the school's flagpole is about the same height that you would want the trees to be. However, you don't know how tall the flagpole is! You will find the height of the school's flagpole using your height, the length of your shadow, and the length of the flagpole's shadow.

1. Find your height (and the height of all of your group members) before you go outside for the activity. Record this information on the table provided. Make the measurements as precise as you can.
2. Once outside, stand near the flagpole and measure the shadow for each person in your group. Record this information on the table provided.
3. Next, measure the shadow for the flagpole.
4. Set up a proportion to calculate the height of the flagpole indirectly.
   Hint: The proportion will have your height to your shadow equal to the flagpole height (x) to the flagpole shadow. (Show your calculations!)

Name of group members	Height of group members	Height of the flagpole

Conclusions/Analysis

A. Why might the heights of the flagpole calculated above be different?

_____
_____
_____

B. Why would indirect measurement be chosen to calculate the height of something like a flagpole or a tree?

_____
_____
_____

C. Would you consider doing the job of a landscape architect or a grounds maintenance worker? Why or why not?

_____
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_____

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Name of group members	Height of group members	Height of the flagpole
	Answers will vary.	

<u>Conclusions/Analysis</u>

A. Why might the heights of the flagpole calculated above be different?
   Accept various answers. Ex: "If we didn't measure precisely, that would expliain small differences between our proportion calculations."

B. Why would indirect measurement be chosen to calculate the height of something like a flagpole or a tree?
   Accept various answers. Ex: "Things like flagpoles are hard to measure using a yard stick or ruler."

C. Would you consider doing the job of a landscape architect or a grounds maintenance worker? Why or why not?
   Accept various answers.