

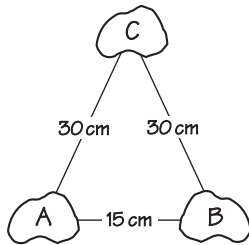
VOLCANIC ISLANDS

The problem: Some castaways are stranded on a volcanic island. How do you get them to safety using only the available materials?

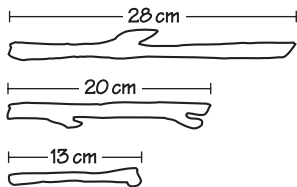
MATERIALS: Some way of marking each of the "islands" (e.g. pencil and paper, three rocks); three sticks or strips of paper.

DOING IT:

1. Arrange the "islands" in the form of an isosceles triangle (i.e. two sides equal in length). The distance between islands A and B should be approximately 15 cm, and between B and C approximately 30 cm.



2. There are three stick "bridges". One bridge is slightly less than the distance between A and B (approximately 13 cm). The second bridge is slightly less than the distance between B and C (approximately 28 cm). The last bridge is approximately 20 cm long.

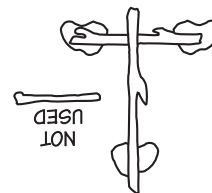


3. There's been a shipwreck and the castaways are stranded on island A. A volcano is erupting on the island. Island B is a little safer than island A, but B's volcano is rumbling. Island C is the safest. The challenge is to figure out a way -- using *only* the given bridges -- to get to island C.

There's a popular old guessing game in which you estimate how many small things are in a jar. Whoever comes closest wins a prize. What's a scientific way of attacking this problem? Let's say you want to find out how many dried peas are in a package. Weigh the package on a scale. Then weigh a small cup. Fill the cup with peas and weigh it again. Subtract the mass of the cup to find the mass of the peas. Count the peas in the cup. Divide the total mass of the package of peas by the mass of the sample. Multiply your answer by the number of peas in the sample to find the total number of peas in the package. You win the prize!

This "volcanic islands" problem involves some basic geometric concepts. People may be able to find the solution by using their knowledge of geometry, or just by using old-fashioned trial and error.

Topics: Problem-Solving; Measurement; Numbers.



A Possible Solution: