

Cal Poly Department of Mathematics

Puzzle of the Week

Feb 2-8, 2012

Annie, Bob, Catherine, and Dan come up to a bridge on a dark night. They have one flashlight and it must be used to cross the bridge. Unfortunately no more than two people can cross the bridge at the same time, and the group has only one flashlight. We know that:

Annie can cross the bridge in 1 minute

Bob can cross the bridge in 2 minutes

Catherine can cross the bridge in 5 minutes

Dan can cross the bridge in 10 minutes.

How can the group cross the bridge in 17 minutes?

Solutions should be submitted to Morgan Sherman:

Dept. of Mathematics, Cal Poly

Email: sherman1 -AT- calpoly.edu

Office: bldg 25 room 310

before next Thursday. Those with correct and complete solutions will have their names listed on the puzzle's web site (see below) as well as in next week's email announcement. Anybody is welcome to make a submission.

<http://www.calpoly.edu/~sherman1/puzzleoftheweek>

Solution: One solution has Annie and Bob crossing first together. Annie comes back and gives the flashlight to Catherine and Dan who cross together. Then Bob returns to pick up Annie and the two of them go over together. In total the amount of time needed is then $2+1+10+2+2 = 17$ minutes.