

Rockhurst University Mathematics Problem of the Month

Winners will be chosen according to who has the best solution (not just answer) to the problem. Ties will be resolved by considering the order in which the solutions were received.

Solutions should be submitted to Keith Brandt (Richardson 120) by the end of the month. Winners receive wonderful prizes, so give these problems some thought!

Problems For September 2005:

1. Bouncing off the x-axis.
 - a. Consider the points in the plane (1,2) and (3,4). You wish to connect the two points by drawing a (not necessarily symmetrical) "V" shape from (1,2) down to the x-axis and back up to (3,4). Find the shortest such V that connects the two points.
 - b. Given arbitrary points (a,b) and (c,d) above the x-axis, find the shortest V that connects them.
2. In the following, each letter denotes a distinct digit, and the letter O is not equal to zero. Find the value of each digit given the following:

$$\text{ONE} + \text{ONE} + \text{ONE} + \text{ONE} = \text{TEN}$$