s) In right triangle ABC with a right angle at C, AC = 12 and BC = 9. Point P is on side AB so that AP = 10 and PB = 5. How many units long is segment CP? Express your answer in simplest radical form.

A
12
10
P
5
C   9   B
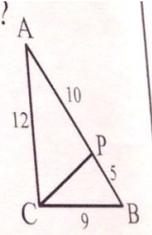
22. _____ (ordered pairs) How many ordered pairs of positive integers (x, y) satisfy both of the inequalities $2x + y < 10$ and $x - y > -2$?
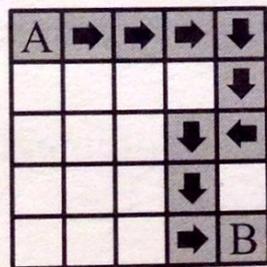
in² Marcela builds a model pyramid out of cubes, each of edge length 1 inch. She starts by making a 10×10 square base out of the cubes. Each additional layer of the pyramid is a square array of cubes with one fewer cube per side than the layer below it. The top layer consists of a single cube. If the pyramid is on the ground so that the bottom is not exposed, how many square inches of surface area are exposed?
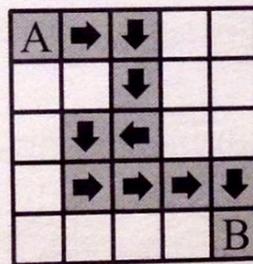
in² 6 in.

1 in.
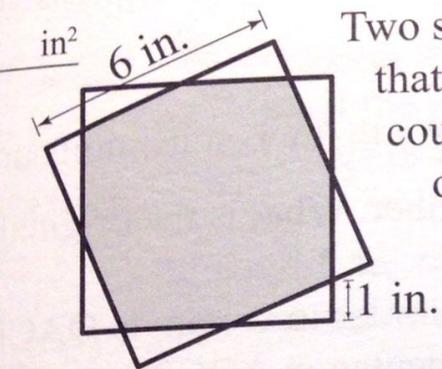
Two square tiles, each with sides of length 6 inches, are arranged so that one lies directly on top of the other. The top tile is then rotated counterclockwise about its center until one of the exposed corners of the bottom tile has height 1 inch, as shown. What is the area of the shaded intersection of the two tiles? Express your answer as a decimal to the nearest tenth.

In a grid of unit squares, a *snake* is a sequence of distinct unit squares, beginning with the upper left corner and ending with the lower right corner, such that any two consecutive squares in the sequence share an edge and no four squares in the sequence share a single vertex. Examples of a snake and a non-snake are given for a 5 × 5 grid. How many different snakes are there in a 5 × 5 grid?

Snake   Not a Snake