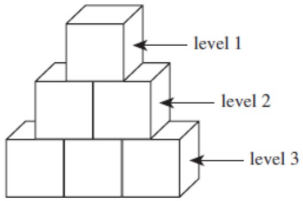
Bellwork Friday, January 31, 2014

1. Carmen is playing with blocks. She arranges stacks of blocks so that each successive level of blocks has 1 fewer block than the level below it and the top level has 1 block. Such a stack with 3 levels is shown below. Carmen wants to make such a stack with 12 levels. How many blocks would she use to build this stack?

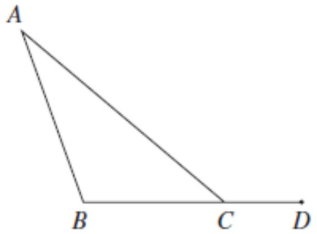


A. 66
B. 78
C. 132
D. 144
E. 156

6. In any parallelogram $ABCD$, it is always true that the measures of $\angle ABC$ and $\angle BCD$:

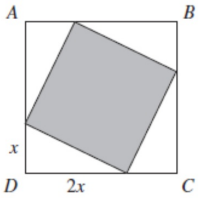
F. add up to 180°.
G. add up to 90°.
H. are each greater than 90°.
J. are each 90°.
K. are each less than 90°.

12. In the figure below, $\angle BAC$ measures 30°, $\angle ABC$ measures 110°, and points B, C, and D are collinear. What is the measure of $\angle ACD$?



F. 150°
G. 140°
H. 130°
J. 120°
K. 110°

33. In the figure below, $ABCD$ is a square. Points are chosen on each pair of adjacent sides of $ABCD$ to form 4 congruent right triangles, as shown below. Each of these has one leg that is twice as long as the other leg. What fraction of the area of square $ABCD$ is shaded?



A. $\frac{1}{9}$
B. $\frac{2}{9}$
C. $\frac{4}{9}$
D. $\frac{5}{9}$
E. $\frac{8}{9}$