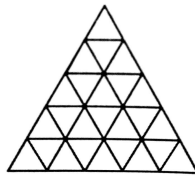


Problems to practice at home

Assigned on 10/9/22

1. After a successful raid, pirates Archie, Billie, Cindy, and Daniel divided their loot of 70 gold coins. Each pirate received at least 1 coin. Archie got more coins than anyone else. Bill and Cindy together received 45 coins. How big was Daniel's share?

2. The triangular castle, pictured below, has triangular rooms and a door in each of its interior walls. A tour guide wants to trace a route through this castle that would not visit any room more than once. What is the maximum number of rooms one can visit on such a tour? (A tour can start and end in any two rooms.)

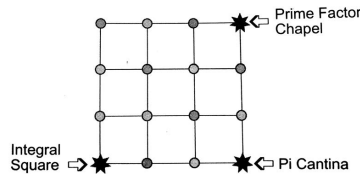


3. Mischievous Sam has changed two digits in Tom's homework problem, and the exercise now reads:

$$4 \times 5 \times 4 \times 5 \times 4 = 2247.$$

Help Tom find the changed digits and restore the equality.

4. Downtown MathHatten has 4 streets going east-west, and 4 avenues going north-south, with a small plaza at each intersection. All roads can be walked in both directions.



- (a) Can you walk from the Integral Square to the Pi Cantina, visiting each plaza exactly once?

- (b) Can you walk from the Integral Square to the Prime Factor Chapel, visiting each plaza exactly once?