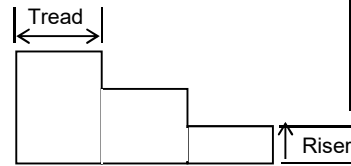1. Madison went shopping and spent 1/3 of her money at Nob Hill. She then spent 1/2 of what she had left at Salinas City BBQ After that, she had $7 left. How much money did she spend at Nob Hill?

2. A cell colony begins with 5 cells. After every 8 hours, each cell divides into 2 cells. How many cells are there after 4 days? Express your answer to 3 digit accuracy in scientific notation.

3. Ava has 5 pairs of pants, 5 skirts, 10 pairs of shoes and 12 blouses. The blouses, pants, pairs of shoes and skirts are distinct. Ignoring any attempt at taste, if she must wear either a skirt or pants, shoes (that match!) and a blouse, how many different outfits can Ava create?

4. The top three steps of a stairway are shown. The stairway has 47 steps with 47 risers that are each 2 cm high. The 47 treads are each 8 cm wide. If all the stairs were shown in the figure, what would be the area of the figure?

5. Joshua and Kai are taking one candy each. There are 13 Snickers and 5 Milky Ways in a bag. If Joshua goes first and they choose randomly, what is the probability that they'll both get a Snickers? Express your answer as a common fraction.

6. Compute f(20) where f(n) is as shown. Express your answer in scientific notation to 4 digit accuracy.

$$f(n) = \frac{\left(1+\sqrt{5}\right)^n - \left(1-\sqrt{5}\right)^n}{2^n \sqrt{5}}$$