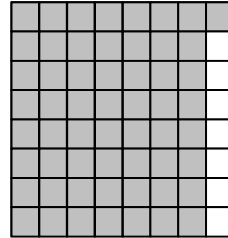1. What is the single discount that is equivalent to the two successive discounts of 35% off followed by 34% off the discounted_price? Answer to the nearest hundredth of a percent.
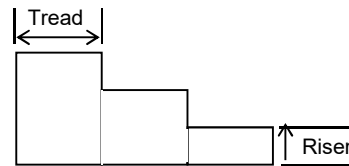
2. Anthony and Kai are playing the Shade Game. Two standard dice are rolled, and the sum of the numbers shown is the number of blank squares that must now be shaded in.

It is Kai's turn, and the grid is shown here. What is the probability that Kai will win on this turn by rolling the exact sum needed to shade the rest of the grid? Express your answer as a common fraction. Show the number of ways to get the sum in the space below.

3. A nursery employee wishes to plant 3 Golden Delicious apple trees, 10 Bartlett pear trees and 6 Harcot apricot trees in one row. How many distinct arrangements are possible? Express your answer in scientific notation to 3 digit accuracy. Show the setup in the space below.

4. The top three steps of a stairway are shown. The stairway has 78 steps with 78 risers that are each 2 cm high. The 78 treads are each 11 cm wide. If all the stairs were shown in the figure, what would be the area of the figure?

Tread

Riser

5. A train has 28 seats of which 3 are broken. The conductor needs to fill out a form that identifies the broken seats.

If she randomly identifes the 3 broken seats, what is the probability that she identified all the correct seats? Express your answer in scientific notation to 3 digit accuracy.

6. A cube consists of 343 white unit cubes. All exterior faces of the cube except the bottom face are painted green. How many cubes have exactly two faces painted green?