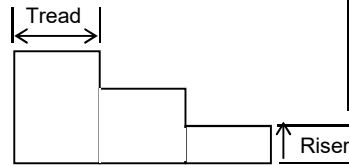


1. A train has 20 seats of which 17 are broken. The conductor needs to fill out a form that identifies the broken seats.

If she randomly identifies the 17 broken seats, what is the probability that she identified all the correct seats? Express your answer in scientific notation to 3 digit accuracy.

2. Antonella and Kai are taking one candy each. There are 4 Snickers and 15 Milky Ways in a bag. If Antonella goes first and they choose randomly, what is the probability that they'll both get a Snickers? Express your answer as a common fraction.

3. The top three steps of a stairway are shown. The stairway has 101 steps with 101 risers that are each 6 cm high. The 101 treads are each 10 cm wide. If all the stairs were shown in the figure, what would be the area of the figure?



4. Compute $f(13)$ where $f(n)$ is as shown. Express your answer in scientific notation to 4 digit accuracy.

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

5. What is the single discount that is equivalent to the two successive discounts of 41% off followed by 27% off the discounted price? Answer to the nearest hundredth of a percent.