

# Solution to Q10.13.1.23

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Question: A girl calculates that the probability of her winning the first prize in a lottery is 0.08. If 6000 tickets are sold, how many tickets has she bought?

(A) 40 (B) 240 (C) 480 (D) 750

**Solution:** Let  $X$  denote the bernoulli variable  
 $X = 1$  denotes that she bought the ticket

Probability of winning ( $p_{X(1)}$ ) = 0.08

Number of tickets sold = 6000

$$\begin{aligned}
 p_{X(1)} &= \frac{\text{Number of tickets bought}}{\text{Total number of tickets sold}} \\
 0.08 &= \frac{X(1)}{6000} \\
 X(1) &= 0.08 * 6000 \\
 &= 480
 \end{aligned}$$