


# Quiz: Law of Large Numbers

1. A coin is tossed and you win \$1 if there are more than 60% heads. Which is better: 10 tosses or 100?
2. As in #1, but you win \$1 if there are more than 40% heads.
3. As in #1, but you win \$1 if there are between 40% and 60% heads.
4. As in #1, but you win \$1 if there are exactly 50% heads.
5. Assume that $\text{sd}_{\text{box}}$ for coin-tossing is 0.5.

   a) The number of heads in 25 tosses will be around _____ give or take _____ or so.

   b) The percent of heads in 25 tosses will be around _____ give or take _____ or so.

   c) The number of heads in 36 tosses will be around _____ give or take _____ or so.

   d) The percent of heads in 36 tosses will be around _____ give or take _____ or so.

   e) The number of heads in 100 tosses will be around _____ give or take _____ or so.

   f) The percent of heads in 100 tosses will be around _____ give or take _____ or so.

6. Nine hundred draws are made at random with replacement from the box | 1 | 2 | 3 |

   a) How small can the sum be? How large?

   b) How many times do you expect the ticket 1 to turn up? The ticket 3?

   c) About how much do you expect the sum to be?

   d) Put a plus or minus on your answer to c).