

S-MD.2,5 Sounds Really Good! (sort of...)

Task

A friend of yours, Phil, writes to you asking about a new scratch-off lottery game. It costs \$10 to play this game. There are two outcomes for the game (win, lose) and the probability that a player wins a game is 60%. A win results in \$15, for a net win of \$5.

The probability distribution for X = the amount of money a player wins (or loses) in a single game is as follows:

X	Probability of X
+\$5	.60
-\$10	.40

- Compute the expected value of X .
- Your friend wants to know if he should play this game many, many times to make some extra money because the 60% chance of winning \$5 sounds really good. Based on your calculation in part (a), complete the following message to your friend Phil that **clearly recommends whether or not he should play this game many, many times** and **explains how the value you computed in part (a) led you to that conclusion**.

Phil:

Regarding your idea that you should play this new lottery game many, many times to make some extra money, I think...



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