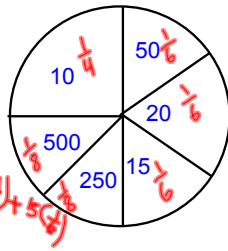


Expected Value Problem

With one spin of the wheel, how much money do you expect to win?



$$10\left(\frac{1}{4}\right) + 500\left(\frac{1}{8}\right) + 250\left(\frac{1}{8}\right) + 50\left(\frac{1}{6}\right) + 20\left(\frac{1}{6}\right) + 15\left(\frac{1}{6}\right) = 110.42$$

How much should you charge to play the game if you would like it to be fair?

May 2-8:24 AM

Expected Value

You purchase a new TV from Best Buy. They offer a 2-year warranty package for \$20 or a 5-year warranty package for \$40. A typical repair for this TV costs \$50. The probabilities for this TV needing repairs over 2 and 5 year periods are in the chart. Which, if any, warranty package should you purchase?

# of Repairs	0	1	2	3
Probability of Repairs over a 2-year Period	.85	.1	.04	.01
Probability of Repairs over a 5-year Period	.6	.25	.1	.05

2 yr: Expected # of repairs $0(.85) + 1(.1) + 2(.04) + 3(.01)$
 .21 repairs x \$50 = \$10.50
 cheaper than \$20 cost so don't buy 2-yr plan

5 yr: Expected cost of repairs is \$30
 Don't buy 5-yr plan

May 2-8:46 AM
