

# Key

## Math 150 Quiz 8

1. In one form of the game Keno, the house has a pot containing 80 balls, each marked with a different number from 1 to 80. You buy a ticket for \$1 and mark one of the 80 numbers on it. The house then selects 20 numbers at random. If your number is among the 20, you get \$3.20. Find the expected winnings.

X	\$3.20	\$0
P(X)	20/80	60/80
X · P(X)	.8	0

Total = .8 - \$1 = -.20 (player should expect to lose 20¢)

↑  
cost to play

1. A baseball team has 15 players. How many 9-player batting orders are possible?

$$\underline{15} \underline{14} \underline{13} \underline{12} \underline{11} \underline{10} \underline{9} \underline{8} \underline{7} =$$

1,814,214,400 possible batting orders

or

$${}_{15}P_9$$