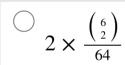## Evaluation 3 Problem 1

1/1 point (graded)

Suppose you flip a fair coin six times. What is the probability that you'll get four heads and two tails? *Choose the best answer.*

○ $\left(\frac{1}{2}\right)^4$

◉ $\frac{\binom{6}{4}}{64}$

○ $2 \times \frac{\binom{6}{2}}{64}$

○ $\frac{4}{6}$

✔

| Submit | You have used 1 of 2 attempts |

✔ Correct (1/1 point)

Evaluation 3 Problem 2

1/1 point (graded)

Suppose you flip a fair coin seven times. What is the probability you'll get either three heads and four tails, or four heads and three tails? *Choose the best answer.*

○ $\frac{3^7+4^7}{2^7}$

○ $\dfrac{7^3+7^4}{2^7}$

⦿ $\dfrac{\binom{7}{3}+\binom{7}{4}}{2^7}$

○ $\dfrac{\binom{7}{3}+\binom{7}{4}}{\binom{7}{2}}$

✔

Submit | You have used 1 of 2 attempts

✔ Correct (1/1 point)

Evaluation 3 Problem 3

1/1 point (graded)

Say you flip a coin seven times. What is the probability the number of heads will be even? *Choose the best answer.*

○ $\dfrac{\binom{7}{4}}{2^7}$

○ $\dfrac{\binom{7}{2}}{2^7}$

⦿ $\dfrac{1}{2}$

○ $\dfrac{\binom{7}{4}}{\binom{7}{2}}$

✔

✔ Correct (1/1 point)

Evaluation 3 Problem 4

1/1 point (graded)
In the game of Phigh, you roll three dice and your score is the highest number showing.

What is the probability of getting a score of "2" or less? *Choose the best answer.*

○ $\dfrac{6^3 - 4^3}{6^3}$

◉ $\dfrac{2^3}{6^3}$

○ $\binom{6}{2} - \binom{8}{5} - \binom{7}{5}$
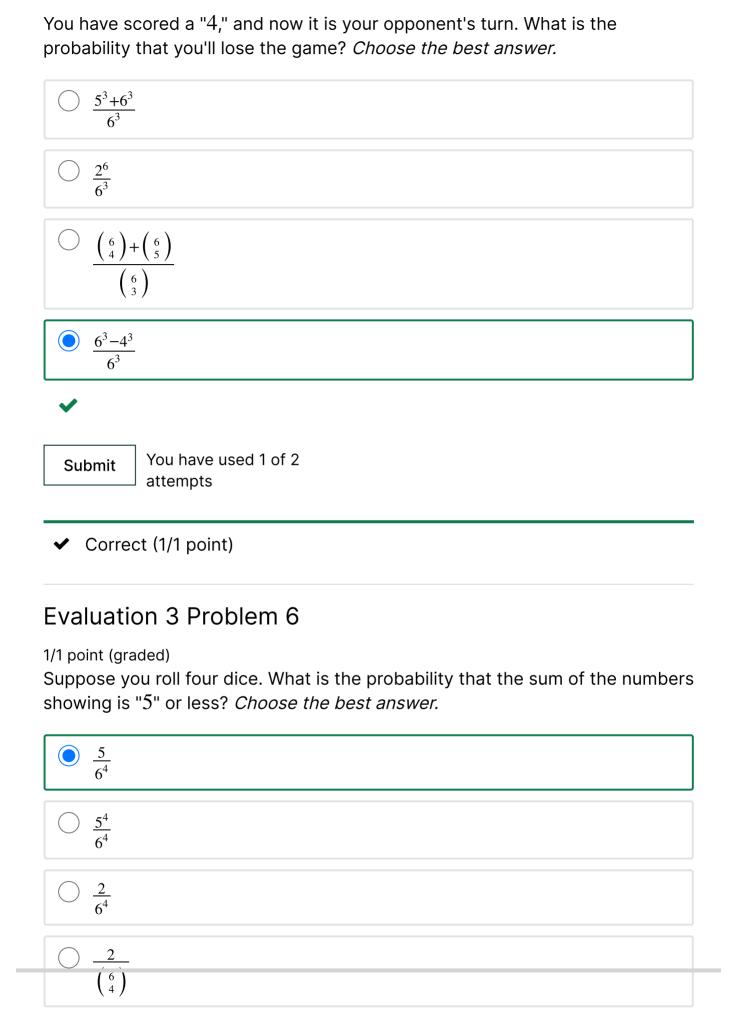
○ $\dfrac{\binom{6}{2} + \binom{6}{1}}{\binom{6}{3}}$

✔

✔ Correct (1/1 point)

Evaluation 3 Problem 5

1/1 point (graded)
In the game of Phigh, you roll three dice and your score is the highest number showing.

You have scored a "4," and now it is your opponent's turn. What is the probability that you'll lose the game? *Choose the best answer.*

○ $\dfrac{5^3+6^3}{6^3}$

○ $\dfrac{2^6}{6^3}$

○ $\dfrac{\binom{6}{4}+\binom{6}{5}}{\binom{6}{3}}$

◉ $\dfrac{6^3-4^3}{6^3}$

✔

| Submit | You have used 1 of 2 attempts |

✔ Correct (1/1 point)

Evaluation 3 Problem 6

1/1 point (graded)

Suppose you roll four dice. What is the probability that the sum of the numbers showing is "5" or less? *Choose the best answer.*

◉ $\dfrac{5}{6^4}$

○ $\dfrac{5^4}{6^4}$

○ $\dfrac{2}{6^4}$

○ $\dfrac{2}{\binom{6}{4}}$

✔

✔ Correct (1/1 point)

Evaluation 3 Problem 7

1/1 point (graded)

What is the probability of being dealt a full house, aces over kings? In other words, what is the probability of being dealt a five-card poker hand containing three aces and two kings *Choose the best answer.*

NOTE: See the Guide to Poker Hands for a summary of terminology.

○ $\dfrac{\binom{4}{3}+\binom{4}{2}}{\binom{52}{5}}$

◉ $\dfrac{\binom{4}{3}\times\binom{4}{2}}{\binom{52}{5}}$

○ $\dfrac{4\times(4\times3)}{\binom{52}{5}}$

○ $\dfrac{(4\times3\times2)\times(4\times3)}{\binom{52}{5}}$

✔

✔ Correct (1/1 point)

Evaluation 3 Problem 8

1/1 point (graded)

In a standard deck of cards, two suits (diamonds and hearts) are red, and the other two (spades and clubs) are black. We'll call a poker hand a "nearsighted flush" if all five cards are of the same color. What is the probability of being dealt a nearsighted flush? *Choose the best answer.*

○ $\dfrac{2\times26^5}{52^5}$

○ $\dfrac{\binom{26}{5}}{\binom{52}{5}}$

○ $\dfrac{2\times\binom{26}{5}-4\times\binom{13}{5}}{\binom{52}{5}}$

● $\dfrac{2\times\binom{26}{5}}{\binom{52}{5}}$

✔

Submit	You have used 1 of 2 attempts

✔ Correct (1/1 point)