Assessment quiz

Computational Cognitive Science

Exercise 1. $e^x dx =?$

Exercise 2. $\sum_{i=1}^{10} \frac{(-1)^i}{i}$? 0
In the expression above '?' should be replaced with $>$, $<$, $=$, $\leq$, $\geq$

Exercise 3. $ln(0) =?$

Exercise 4. $\int_0^1 axdx =?$

Exercise 5. What is the probability that a fair coin tossed 5 times comes up Tails exactly once?

Exercise 6. What is the expected value of sampling a random variable 1000 times from a distribution with probability density function $f(x) = exp(-x^2)$?

Exercise 7. x + y = 12, x - y = 8
y = ?

Exercise 8. The probability of choosing an alternative in a long sequence of repeated choices is proportional to the total reward derived from that alternative, a phenomenon known as probability matching rule.

Suppose that a person is choosing between a red, blue, and yellow buttons in a gambling machine, were the past rewards of the buttons are:
red: $1, 1, 1, 0, 0, 0, 0, 0$
blue: $0, 0, 0, 0, 1, 0, 0, 0$
yellow: $0, 1, 0, 0, 0, 1, 0, 0$

Assuming the person keeps playing, what is the probability that next choice will be yellow according to this rule?