

9. [6 points] Suppose that a psychology experiment is designed so that every participant receives a score that is some (positive or negative) real number. The score that a participant receives is called his or her “experimental score”. The experiment is calibrated so that the probability density function of the distribution of experimental scores is standard normal, call it $g(x)$.

a. [3 points] Use a complete sentence to give a practical interpretation of the integral expression

$$\int_{-4}^3 g(x) dx$$

in the context of this problem.

b. [3 points] Note that $g(1) = \frac{1}{\sqrt{2e\pi}} \approx 0.24$. Which of the following is the best practical interpretation of the mathematical statement $g(1) \approx 0.24$? Circle the ONE best option.

- i. The fraction of the population having experimental score equal to 1 is approximately 24 percent.
- ii. The fraction of the population having experimental score equal to 0.24 is approximately 1 percent.
- iii. The fraction of the population having experimental score between 0.9 and 1.1 is approximately 4.8 percent.
- iv. The fraction of the population having experimental score between 0.23 and 0.25 is approximately 20 percent.
- v. The fraction of the population having experimental score above 1 is approximately 76 percent.
- vi. The fraction of the population having experimental score above 0.24 is approximately 1 percent.