

## Review Quiz 4

**Instructions.** You have 10 minutes to complete this review quiz. You may use your calculator. You may not use any other materials. Put your answers on the separate answer form provided.

- Suppose  $X$  and  $Y$  are random variables, where  $X$  is the wait time to buy a movie ticket and  $Y$  is the wait time to buy a large popcorn. Let  $X$  and  $Y$  have joint density function  $f(x, y) = 0.1e^{-(0.5x+0.2y)}$  for all  $x \geq 0, y \geq 0$ , and  $f(x, y) = 0$  otherwise. Which integral gives the probability that you wait longer than 3 minutes to buy your ticket?
  - $\int_0^\infty \int_0^\infty 0.1e^{-(0.5x+0.2y)} dx dy$
  - $\int_0^\infty \int_0^3 0.1e^{-(0.5x+0.2y)} dx dy$
  - $\int_0^\infty \int_3^\infty 0.1e^{-(0.5x+0.2y)} dx dy$
  - $\int_3^\infty 0.1e^{-(0.5x+0.2y)} dx$
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- We can approximate the double integral  $\int_0^6 \int_0^6 f(x, y) dy dx$  with a Riemann sum by partitioning the region with  $0 \leq x \leq 6$  and  $0 \leq y \leq 6$  into four equal squares. Which expression could arise as our approximation?
  - $[f(3, 3) + f(3, 6) + f(6, 3) + f(6, 6)] \cdot 4$
  - $[f(3, 3) + f(3, 6) + f(6, 3) + f(6, 6)] \cdot 6$
  - $[f(3, 3) + f(3, 6) + f(6, 3) + f(6, 6)] \cdot 9$
  - $[f(3, 3) + f(3, 6) + f(6, 3) + f(6, 6)] \cdot 16$
  - $[f(3, 3) + f(3, 6) + f(6, 3) + f(6, 6)] \cdot 36$
- Which of the following TV shows have you enjoyed the most?
  - Game of Thrones
  - Stranger Things
  - Orange is the New Black
  - Breaking Bad
  - Scandal
- My favorite DTA restaurant is
  - Sofi's Crepes
  - Chick and Ruth's
  - Mission BBQ
  - Iron Rooster
  - None of the above
- Who will win the Army-Navy football game this weekend?
  - Navy
  - Army
  - Air Force
  - CBS
  - None of the above