

Announcements

WeBWorK #2 is now open

- Due Wednesday, January 18 at 9pm
- Covers material from “Unit 2”—see syllabus on course web page
- Together with the suggested problems, these are your best way to practice for the in-class quizzes

Quiz #1 will take place here on Friday, January 20 (second half of class time)

- Covers material from Units 1–2 (same material as WeBWorKs #1–2)
- You **must** bring your student ID to class on every quiz day
- You **must** take the quiz in the section you’re registered in

Friday, January 13

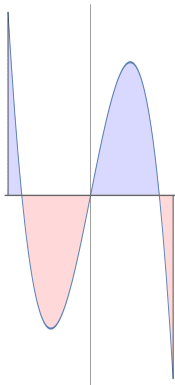
Clicker Questions

Clicker Question 1

Definite integrals of odd and even functions

Suppose that $o(x)$ is an odd function and $e(x)$ is an even function. Which of the following statements is always true? (Hint: think geometrically.)

- A. $\int_{-5}^5 e(x) dx$ always equals 0
- B. $\int_{-5}^5 o(x) dx$ is always an odd integer
- C. $\int_{-5}^5 o(x) dx$ always equals $\int_{-5}^5 e(x) dx$
- D. $\int_{-5}^5 e(x) dx$ is always nonnegative
- E. $\int_{-5}^5 o(x) dx$ always equals 0



Clicker Question 2

A definite integral

Evaluate $\int_1^{e^2} \frac{1}{t} dt$.

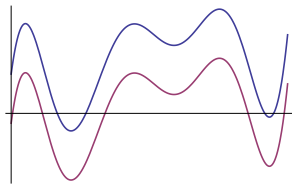
- A. 2, since $\int_1^{e^2} \frac{1}{t} dt = \log t \Big|_1^{e^2} = \log(e^2) - \log(1) = 2 - 0$
- B. $1 - \frac{1}{e^4}$
- C. $\frac{1}{e^2} - 1$
- D. $\log(e^2) - 1$
- E. none of the above

Clicker Question 3

Recalling properties of derivatives

Suppose that $f(x)$ and $g(x)$ are differentiable functions, and $f'(x) = g'(x)$ for all x . What is the relationship between f and g ?

- A. $f(x)$ is $g(x)$ times a constant
- B. $f(x)$ is $g(x)$ plus a constant
- C. $f(x)$ and $g(x)$ add to 0
- D. $f(x)$ and $g(x)$ are the same function
- E. no relationship, totally random



Clicker Question 4

An indefinite integral

If $a > 0$ is a constant, what is $\int a^x dx$?

A. $\frac{a^{x+1}}{x+1} + C$

B. $a^x + C$

C. $\frac{a^{x+1}}{a+1} + C$

D. $\frac{1}{\log a} a^x + C$, as $\frac{d}{dx} \left(\frac{1}{\log a} a^x + C \right) = \frac{1}{\log a} \frac{d(a^x)}{dx} = \frac{(\log a) a^x}{\log a}$

E. $(\log a) a^x + C$

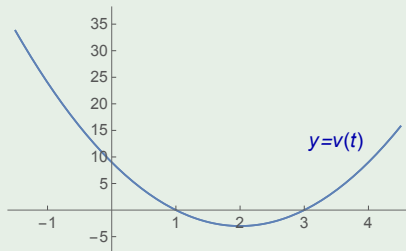
Clicker Question 5

Velocity and position

A particle travels along the x -axis. Its velocity at time t is given by

$$v(t) = 3t^2 - 12t + 9.$$

Which of the following describes the particle?



- A. moves to the left for $t \leq 2$
- B. moves to the left for $t \leq 0$
- C. moves to the left for $1 \leq t \leq 3$
- D. always moves to the right
- E. moves down for $t \leq 2$