

Announcements

Quiz #1 will take place today, starting halfway through class

- You **must** have your student ID
- You **must** take the quiz in the section you're registered in
- Completely closed book, no phones or calculators, etc.

WeBWorK #2 is now open

- Due Wednesday, January 20 at 9pm
- Covers material from “Week 2”—see syllabus on course web page

Friday, January 15

Clicker Questions

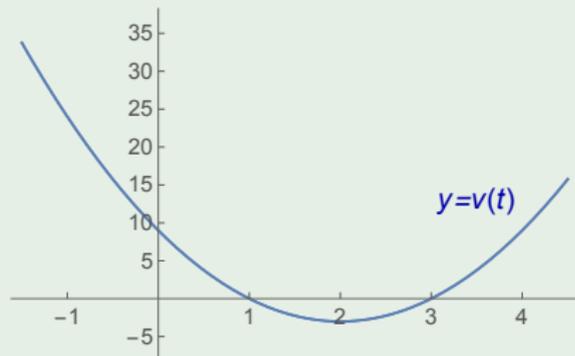
Clicker Question 1

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 $t \leq 2$

Clicker Question 2

Definite integrals and units

Suppose the variable t represents time in hours, and the function $P(t)$ represents the power level of a generating station, measured in megawatts.

What are the **units of** $\int_0^{24} P(t) dt$?

- A. **megawatt-hours** — same units as $\sum_{i=1}^n P(x_i^*) \Delta t$
- B. megawatts per hour
- C. megawatts
- D. joules
- E. none of the above

Side note: power is the rate of change of energy, so

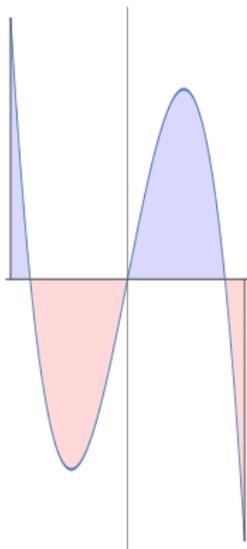
$$\int_0^{24} P(t) dt = \int_0^{24} E'(t) dt = E(24) - E(0).$$

Clicker Question 3

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



Quiz #1: Friday, January 15

Exam conditions

- Put away **all** books, notes, calculators
- Turn off your phones and keep them out of sight
- Pass us your student ID (UBCcard) if asked
- **Do not start writing** until told to do so
- Even if you finish the quiz early, stay in your seat
- When the quiz ends, **do not start talking** until all quiz papers have been collected
- Collect your ID from the instructor if necessary