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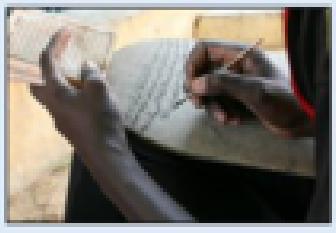
Education Abroad Program



STUDY ABROAD – Get Started!

Attend Info Meetings in October/November

- Learn about specific countries/programs, how to choose a program, how to apply for scholarships, and more
- Applications for Summer/Fall/Year 2019-20 programs due in October-March
- www.eap.ucsb.edu | South Hall 2431

Study Abroad with UCEAP in 40+ Countries to:

- Earn UC units
- Take major/minor/GE courses = graduate on time
- Use your financial aid
- Participate in internships and research opportunities

2019-20 Scholarships:

- Federal Pell Grant Students–
  Apply for the Gilman Scholarship (up to $8K)
- UCEAP Promise Awards = giving away $1.5million this year

Graduating seniors & transfer students are eligible!

Generation Study Abroad

Homework 22 #8

The price of a certain computer stock t days after it is issued for sale is $p(t) = 100 + 20t - 4t^2$ dollars. The price of the stock initially rises, but eventually begins to fall.

(a) During what period of time does the stock price rise?

(b) If you owned the stock, after how many days would you sell it?

Homework 22 #10

Air is pumped into a spherical balloon, so the balloon expands. The volume of a sphere of radius R is $4\pi R^3/3$. If the radius of the sphere after t seconds is $2t$ centimeters, at what rate is air being pumped in when $t = 5$?

Hint: The rate air is pumped in equals the rate that the volume of the sphere increases.

How To Find A Max / Min

(1) Find $f'(x)$

(2) Solve $f'(x) = 0$. This is the x value that gives the max / min.

(3) To find the maximum / minimum plug the value of x found in (2) back into $f(x)$.

Example: Use this method to find the x-value where maximum of the function $f(x) = 5x - e^{2x}$ occurs.

(A) 0 (B) $\ln(5)$ (C) $2\ln(5)$ (D) $2\ln(5/2)$ (E) $\ln(5/2)/2$

Answer: E

Word Problem #1 (a re-run!)

A fenced garden with an area of 1000 m^2 will be made in the shape of a rectangle. It will be surrounded on all four sides by a fence. Three sides are wood fence, and the remaining side is a brick wall.

- The wood fence costs \$5 per meter length.
- The brick wall costs \$20 per meter length.
- C = total cost of the fence and brick wall
- L = length of the brick wall, W = width of the other side

(a) Find a formula for C in terms of only L.

(A) $2W + 2L$ (B) $2000L^{-1} + 2L$ (C) $25L + 10000L^{-1}$

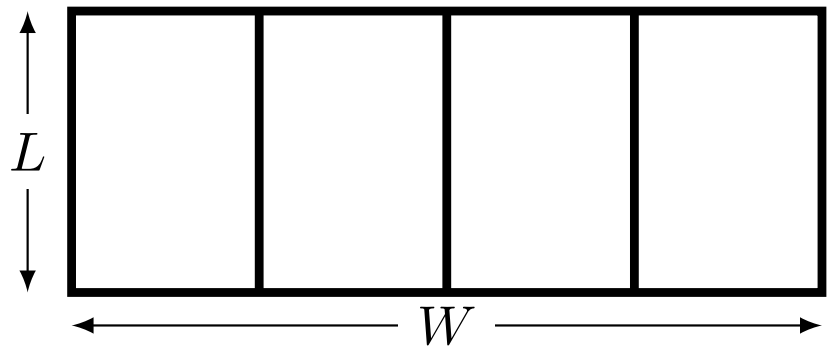
(D) $20L + 10000WL^{-1}$ (E) $5L + 3000$ C

(b) What length of brick wall gives lowest cost?

(A) 20 (B) 40 (C) 50 (D) 100 (E) 25 A

Word Problem #2

A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field.

(a) What is the total length of all the fence needed?

(A) $2L + 2W$ (B) LW (C) $5LW$

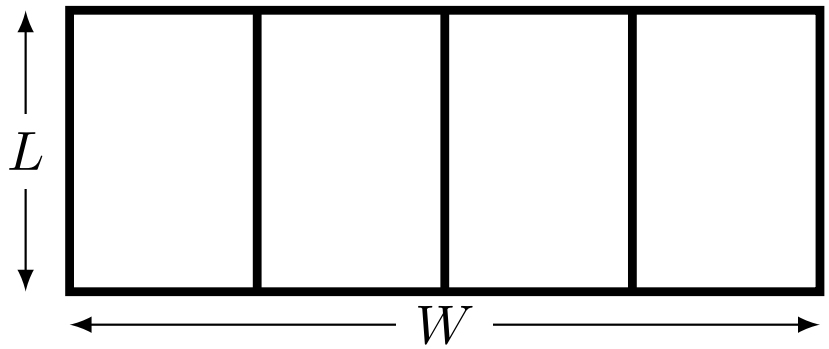
(D) $L + W$ (E) $5L + 2W$ E

(b) Field must have an area of 1000 m^2. Express W in terms of L.

(A) $1000 - L$ (B) $1000L$ (C) $1000/L$ (D) $1000 + L$ C

Word Problem #2 (cont'd)

A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field.

(c) Express the total length of all the fence needed in terms of L.

(A) $5L + 1000$ (B) $5L + 2000/L$ (C) $5L + 2/L$ B

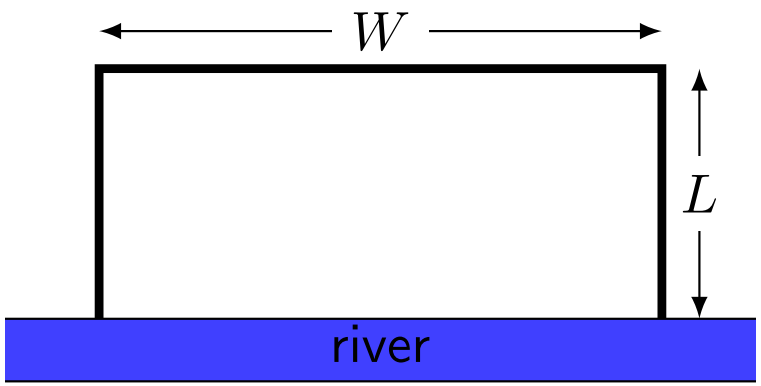
(d) What should L be so that the total length of fence used is a minimum?

(A) 10 (B) 20 (C) 40 (D) 50 B

Word Problem #3

A rectangular field is surrounded on three sides by a fence and the fourth side runs along a perfectly straight river. What is the largest area field which can be so enclosed with 120 meters of fence?

(A) 1200 m^2 (B) 1500 m^2 (C) 1800 m^2 (D) 1000 m^2 C



Word Problem #4

Tickets are going to be sold for a concert.

- If the price of each ticket is \$40, then 2,000 tickets will be sold.
- For every \$1 the price is decreased, 100 more tickets will be sold.

(a) If the tickets are sold for $\$x$ each, how many will be sold? C

(A) $2000 - 100x$ (B) $2000 + 100x$ (C) $6000 - 100x$ (D) $6000 + 100x$

(b) What is the total amount of money generated from selling tickets for $\$x$ each? Answer: A

(A) $6000x - 100x^2$ (B) $2000x$ (C) $2000 - 40x^2$ (D) $6000 - 100x$

(c) What price should the tickets be to generate the most money from sales? Answer: D

(A) \$20 (B) \$22 (C) \$24 (D) \$30 (E) \$40

Word Problem #5

A farmer is growing wheat.

- On July 1, she has 1,000 bushels and this increases by 50 bushels per day.
- The price of a bushel on July 1 is \$10 and is dropping at a rate of 20 cents per day.
- She will harvest and sell on the same day.

How many days should she wait, assuming these trends continue?

(A) 5 (B) 10 (C) 15 (D) 20 (E) Other C