


Put answers on a separate piece of paper. Label each Section. Show all work for Free Response questions.

## Quick Quiz for AP\* Preparation: Sections 1.1–1.3

 You may use graphing calculator to solve the following problems.

- Multiple Choice** Which of the following gives an equation for the line through  $(3, -1)$  and parallel to the line  $y = -2x + 1$ ?  
(A)  $y = \frac{1}{2}x + \frac{7}{2}$     (B)  $y = \frac{1}{2}x - \frac{5}{2}$     (C)  $y = -2x + 5$   
(D)  $y = -2x - 7$     (E)  $y = -2x + 1$
- Multiple Choice** If  $f(x) = x^2 + 1$  and  $g(x) = 2x - 1$ , which of the following gives  $f \circ g(2)$ ?  
(A) 2    (B) 5    (C) 9    (D) 10    (E) 15

- Multiple Choice** The half-life of a certain radioactive substance is 8 hrs. There are 5 grams present initially. Which of the following gives the best approximation when there will be 1 gram remaining?  
(A) 2    (B) 10    (C) 15    (D) 16    (E) 19
- Free Response** Let  $f(x) = e^{-x} - 2$ .  
(a) Find the domain of  $f$ .    (b) Find the range of  $f$ .  
(c) Find the zeros of  $f$ .

## Quick Quiz for AP\* Preparation: Sections 1.4–1.6


 You should solve the following problems without using a graphing calculator.

- Multiple Choice** Which of the following is the domain of  $f(x) = -\log_2(x + 3)$ ?  
(A)  $(-\infty, \infty)$     (B)  $(-\infty, 3)$     (C)  $(-3, \infty)$   
(D)  $[-3, \infty)$     (E)  $(-\infty, 3]$
- Multiple Choice** Which of the following is the range of  $f(x) = 5 \cos(x + \pi) + 3$ ?  
(A)  $(-\infty, \infty)$     (B)  $[2, 4]$     (C)  $[-8, 2]$   
(D)  $[-2, 8]$     (E)  $\left[-\frac{2}{5}, \frac{8}{5}\right]$

- Multiple Choice** Which of the following gives the solution of  $\tan x = -1$  in  $\pi < x < \frac{3\pi}{2}$ ?  
(A)  $-\frac{\pi}{4}$     (B)  $\frac{\pi}{4}$     (C)  $\frac{\pi}{3}$     (D)  $\frac{3\pi}{4}$     (E)  $\frac{5\pi}{4}$
- Free Response** Let  $f(x) = 5x - 3$ .  
(a) Find the inverse  $g$  of  $f$ .  
(b) Compute  $f \circ g(x)$ . Show your work.  
(c) Compute  $g \circ f(x)$ . Show your work.

## Ch. 1 Review Section

### AP\* Examination Preparation

 You may use a graphing calculator to solve the following problems.

- Consider the point  $P(-2, 1)$  and the line  $L: x + y = 2$ .  
(a) Find the slope of  $L$ .  
(b) Write an equation for the line through  $P$  and parallel to  $L$ .  
(c) Write an equation for the line through  $P$  and perpendicular to  $L$ .  
(d) What is the  $x$ -intercept of  $L$ ?
- Let  $f(x) = 1 - \ln(x - 2)$ .  
(a) What is the domain of  $f$ ?    (b) What is the range of  $f$ ?  
(c) What are the  $x$ -intercepts of the graph of  $f$ ?  
(d) Find  $f^{-1}$ .    (e) Confirm your answer algebraically in part (d).
- Let  $f(x) = 1 - 3 \cos(2x)$ .  
(a) What is the domain of  $f$ ?    (b) What is the range of  $f$ ?  
(c) What is the period of  $f$ ?  
(d) Is  $f$  an even function, odd function, or neither?  
(e) Find all the zeros of  $f$  in  $\pi/2 \leq x \leq \pi$ .