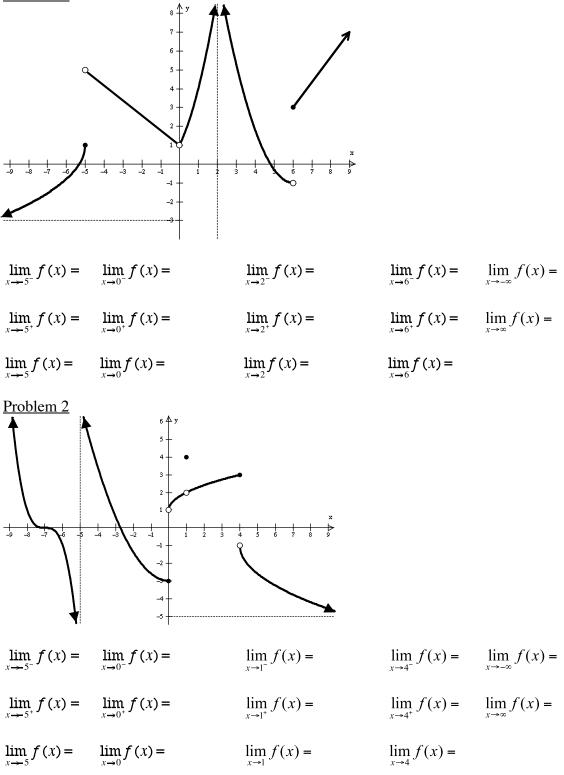
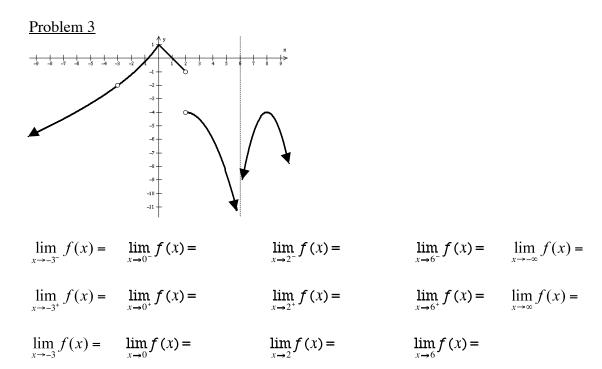
AP Calculus Practice Problems Chapter 1.2 Graphically Determining Limits

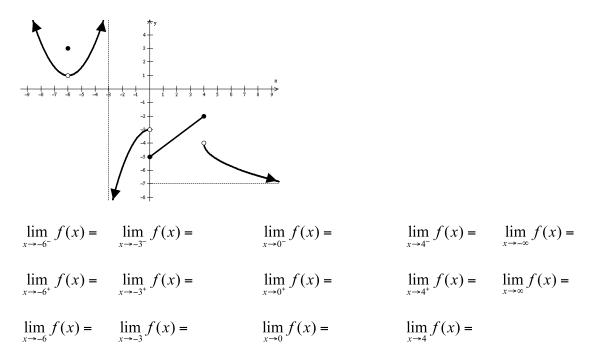
Evaluate the given limits and determine the domain and range for each function. Problem 1



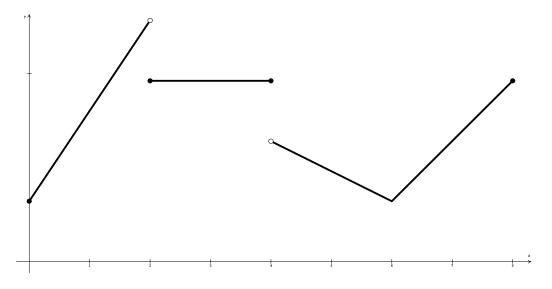
AP Calculus Practice Problems Chapter 1.2 Graphically Determining Limits



Problem 4

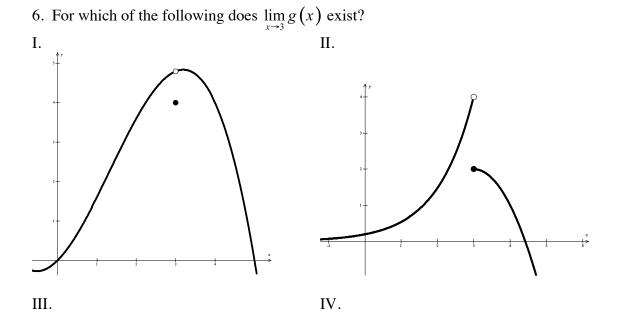


AP Calculus Practice Problems Chapter 1.2 Graphically Determining Limits

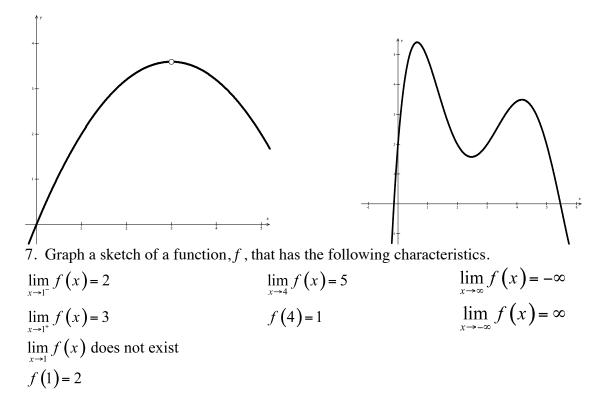


5. The figure above shows the graph of a function f with domain $0 \le x \le 8$. Which of the following statements are true?

I. $\lim_{x \to 2^{-}} f(x)$ exists	IV. $\lim_{x \to 4^-} f(x)$ exists	VII. $\lim_{x\to 6^-} f(x)$ exists
II. $\lim_{x \to 2^+} f(x)$ exists	V. $\lim_{x \to 4^+} f(x)$ exists	VIII. $\lim_{x\to 6^+} f(x)$ exists
III. $\lim_{x \to 2} f(x)$ exists	VI. $\lim_{x \to 4} f(x)$ exists	IX. $\lim_{x\to 6} f(x)$ exists



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8. Graph a sketch of a function, g, that has the following characteristics.

9. Graph a sketch of a function, h, that has the following characteristics.

 $\lim_{x \to 2^{-}} h(x) = -1 \qquad \qquad \lim_{x \to -3^{-}} h(x) = -\infty \qquad \qquad \lim_{x \to \infty} h(x) = \infty$ $\lim_{x \to 2^{+}} h(x) = 0 \qquad \qquad \lim_{x \to -3^{+}} h(x) = \infty \qquad \qquad \lim_{x \to -\infty} h(x) = 0$ $\lim_{x \to 2^{+}} h(x) \text{ does not exist} \qquad \qquad \lim_{x \to -3^{+}} h(x) \text{ does not exist}$ h(2) = 0

For problems 10-14, determine if each statement **must be true**, **could be false**, or **must be false**.

10. If $\lim_{x \to \infty} f(x) = 2$, then the graph of f has at least one horizontal asymptote.

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- 11. If $\lim_{x\to 0^-} f(x)$ exists and $\lim_{x\to 0^+} f(x)$ exists, then $\lim_{x\to 0} f(x)$ exists.
- 12. If $\lim_{x \to 2^{+}} f(x) = 1$, then $\lim_{x \to 2^{-}} f(x) = 1$ and $\lim_{x \to 2^{+}} f(x) = 1$
- 13. If the graph of f has two distinct horizontal asymptotes, then $\lim_{x \to \infty} f(x) = \lim_{x \to -\infty} f(x)$
- 14. If $\lim_{x \to 1^{-}} f(x) = \infty$, then $\lim_{x \to 1^{+}} f(x) = -\infty$