

Name _____

2-3 Lesson Master

Questions on SPUR Objectives
See pages 142–145 for objectives.

PROPERTIES Objective D

In 1 and 2, refer to the table at the right, which gives the total number of bachelor's degrees in computer and information sciences in the United States in various years. Let D be the function mapping the year onto the number of degrees earned.

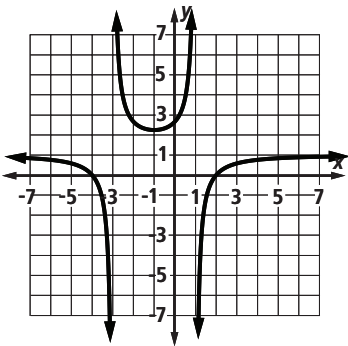
Year	Degrees
1980	11,154
1990	27,347
2000	37,788
2003	57,439
2004	59,488
2005	54,111

1. a. Name an interval over which D is increasing. _____
b. Name an interval over which D is decreasing. _____
2. Note that $D(2000) < D(2005)$. Is D increasing over the interval from 2000 to 2005? Explain.

3. Consider the function h with equation $h(x) = \frac{x}{3} + 7$. Is h increasing over its entire domain, decreasing over its entire domain, or neither? Use the definition of an increasing or decreasing function to prove your answer.

REPRESENTATIONS Objective H

In 4 and 5, refer to the graph at the right.



4. Estimate the intervals over which the function is
- a. increasing. _____
b. decreasing. _____
5. *True or False.*
- a. The function is increasing on the interval $(1, 2)$. _____
b. The function is decreasing on the interval $(-5, 0)$. _____
6. At the right, sketch the graph of a function that satisfies the following conditions:
- increasing over the intervals $(-5, -1)$ and $(2, 5)$
decreasing over the intervals $(-1, 2)$ and $(5, \infty)$

