

Name _____

3-7 Lesson Master

Questions on SPUR Objectives
See Student Edition pages 216–219 for objectives.

PROPERTIES

Objective H

In 1 and 2, let $f(x) = \frac{x-4}{3x-1}$.

- Tell whether f is continuous on the interval.
 - $[3, 6]$ _____
 - $(-2, 1)$ _____
 - $[-4.5, 0]$ _____
- Find $f(0)$, $f(2)$, and $f(5)$. _____
 - From the values in Part a alone, must f have a zero between 0 and 2? Explain.

 - From the values in Part a alone, must f have a zero between 2 and 5? Explain.

- Explain why the function $s : z \rightarrow e^{2z} - \sin^2(z + 1)$ is continuous over the real numbers.

- Use the Intermediate Value Theorem to show that the function f where $f(x) = 4x^2 - 2^x$ has a zero between 0 and 1.

- On January 11, 2009, the high temperature in Chicago, IL was 38°F and the low temperature was 16°F . At some point on that day, was the temperature 22°F ? Explain.

 - On July 1, 2001, the cost of a U.S. postage stamp was 34¢. By May 14, 2007, the price had risen to 41¢. At some point between those dates, must the cost of stamps have been 36¢? Explain.

REPRESENTATIONS

Objective M

In 6 and 7, refer to the graph of the function k at the right.

- Tell whether k is continuous over the interval.
 - $[0, 2]$ _____
 - $[-2, 4]$ _____
 - $(1, 6)$ _____
 - $(-3, -2)$ _____
- Name two pairs of consecutive integers between which k has a zero. _____

