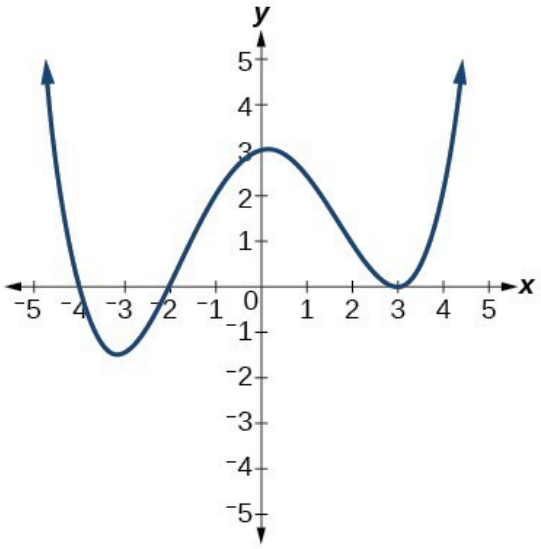
Name_____

**Worksheet #15: Justifications Practice**




This is the graph of $f'(x)$, the derivative of $f(x)$ . $f'(x)$ has horizontal tangents when x = 3, x = 0, and x = -3. Justify each of the following responses.

A) For what value(s) of *x* does *f* have a relative maximum?

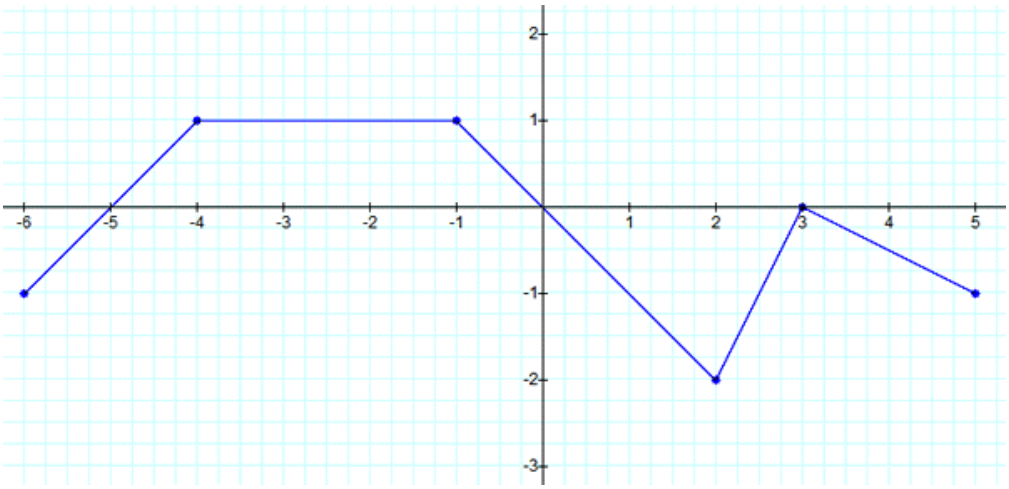
B) For what value(s) of *x* does *f* have a relative minimum?

C) For what interval(s) of *x* is *f* concave downwards?

D) For what interval(s) of *x* is *f* decreasing?

E) At $x = 3$, does $f$ have a relative min, relative max, or point of inflection? Explain.

Name_____




This is the graph of $h$ on the interval [-6, 5]. Let $g(x) = \int_0^x h(t)dt$.

A) For what value(s) of *x* on the open interval (-6, 5) is $h'$ undefined? Explain.

B) Find $h'(-3)$ and $h'(0)$.

C) Find $g(2)$.

D) For what value(s) of *x,* if any, does *g* have a relative maximum? Justify.

E) For what value(s) of *x*, if any, does *g* have a relative minimum? Justify.

F) For what value(s) of *x* on the open interval (-6, 5), if any, does *g* have a point of inflection? Justify.

G) For what interval(s) of *x* on the open interval (-6, 5) is *g* concave upwards? Justify.