

Name: _____

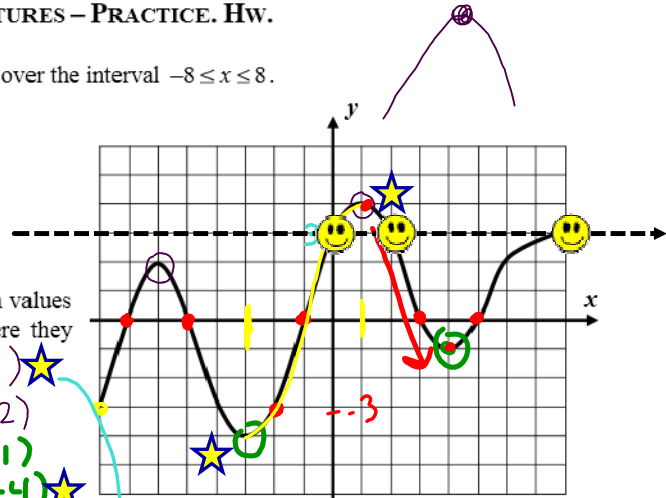
Date: _____

GRAPHICAL FEATURES – PRACTICE. HW.

1. The function $y = f(x)$ is shown graphed below over the interval $-8 \leq x \leq 8$.

(a) Evaluate each of the following;

$f(-2) = -3$ $f(8) = 3$
 $f(-8) = -3$ $f(4) = -1$



(b) Find all the relative maximum and minimum values of the function. State the values of x where they occur as well.

Relative Maximums $(1, 4)$ ★
 $(-6, 2)$
 Relative Minimums $(4, -1)$ ★
 $(-3, -4)$ ★

(c) We talked about relative maximums and relative minimums, but what about **absolute** maximums and minimums. What do you think those are? What are the absolute maximum and absolute minimum values of the function? At what x -values do they occur?

absolute min absolute max

(d) What are the x and y -intercept(s) of the function? List each of the following as an ordered pair (x, y) .

★ x -intercept(s): $(-7, 0)$ $(-5, 0)$ $(-1, 0)$ ★ y -intercept(s): $(0, 3)$
 (zeroes) $(3, 0)$ $(5, 0)$

(e) Give an interval over which the function is increasing. Give an interval over which it is decreasing.

Increasing: $(-3, 1)$ ← INTERVAL NOTATION $-3 < x < 1$
 Decreasing: $1 < x < 4$

input output

(f) Use your graph to find all solutions to the equation $f(x) = 3$. Illustrate your solution graphically.

☺ $x = 0, 2, 8$