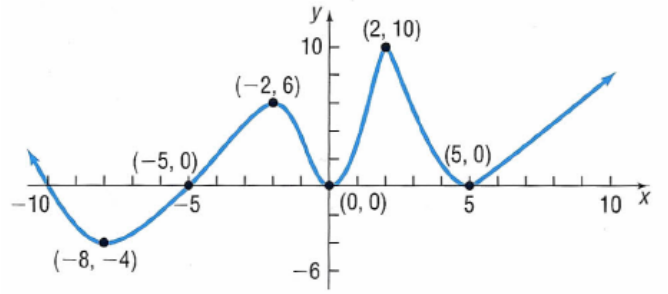
Math Analysis Honors – Worksheet 6 Increasing/Decreasing Functions – Local Maxima and Minima

Success is the maximum utilization of the ability you have. – Zig Ziglar

In problems 1-8, use the given graph of the function *f*.

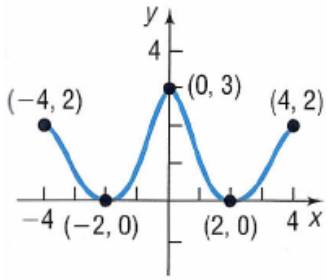


1	Is *f* increasing on the interval $(-8,-2)$?
2	Is *f* increasing on the interval $(2,10)$?
3	List the interval(s) on which *f* is increasing. Justify your answer.
4	List the interval(s) on which *f* is decreasing. Justify your answer.
5	List the value(s) of *x* at which *f* has a local maximum. Justify your answer.
6	List the value(s) of *x* at which *f* has a local minimum. Justify your answer.
7	Find the *x*-intercepts.
8	Find the *y*-intercepts.

For problems 9-12, the graph of a function is given. Use the graph to find:

(a) Its domain and range
(b) The *x*- and *y*- intercepts
(c) The intervals of increase. Justify.
(d) The intervals of decrease. Justify.
(e) The intervals of constant. Justify.

9.



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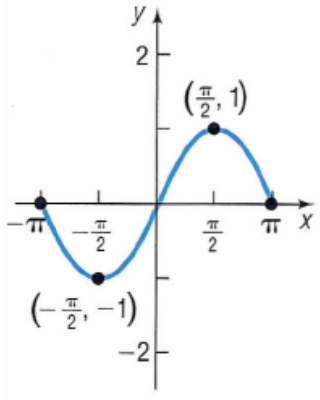

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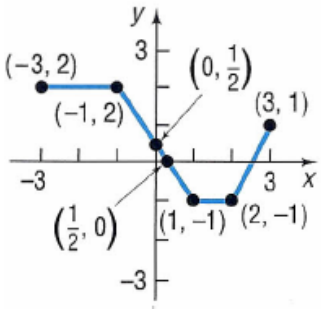

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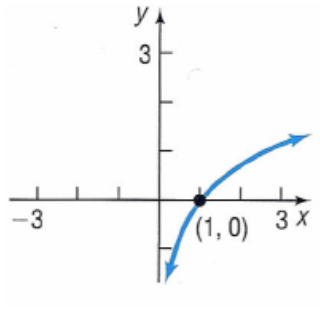
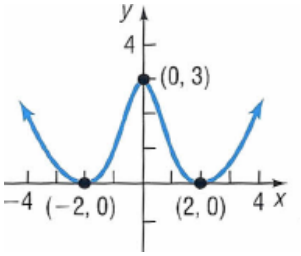


In problems 13-16, the graph of a function f is given. Use the graph to find:

a) The numbers, if any, at which f has a local maximum. What are those local maxima?

b) The numbers, if any, at which f has a local minimum. What are those local minima?

13.



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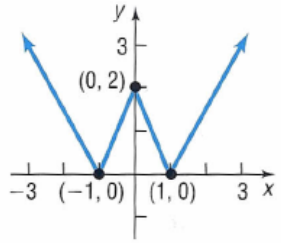

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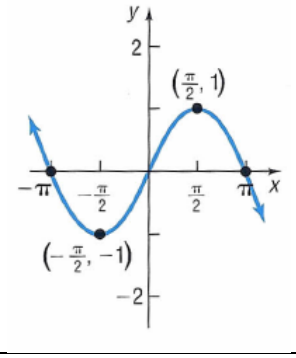

16.