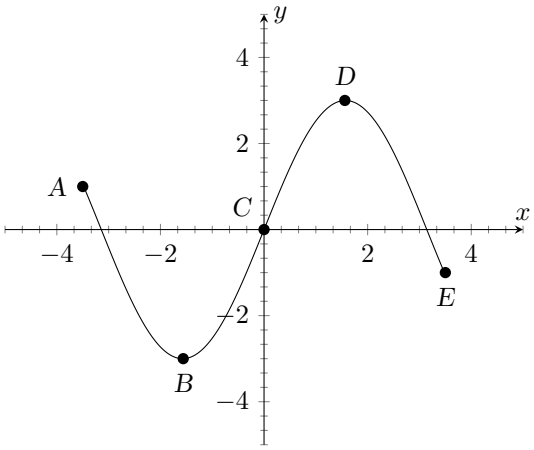
POI-Extrema Practice

Practice for Points of Interest - Extema.

Problem 1 *Consider the following graph.*



Which of the points above is/are a local maximum?

Select All Correct Answers:

(a) A ✓

(b) B

(c) C

(d) D ✓

(e) E

Feedback(*`attempt`*): *Remember that any point that is the largest value in some small segment of the graph nearby is considered a local maximum. In particular you can have more than one local maximum in a graph!*

Problem 1.1 *Which of the points is/are a local minimum?*

Select All Correct Answers:

Learning outcomes:

(a) A

(b) B ✓

(c) C

(d) D

(e) E ✓

Feedback(*`attempt`*): *Remember that any point that is the lowest value in some small segment of the graph nearby is considered a local minimum. In particular you can have more than one local minimum in a graph!*

Problem 1.1.1 *Which of the points is/are an absolute maximum?*

Select All Correct Answers:

(a) A

(b) B

(c) C

(d) D ✓

(e) E

Feedback(*`attempt`*): *Although more than one point can be an absolute maximum, there can be only one absolute maximum value. In other words, the same y-value can be attained on multiple x-values, but the absolute maximum is really asking about the highest y-value attained. So you should ask yourself; which point has the highest y-value?*

Problem 1.1.1.1 *Which of the points is/are an absolute minimum?*

Select All Correct Answers:

(a) A

(b) B ✓

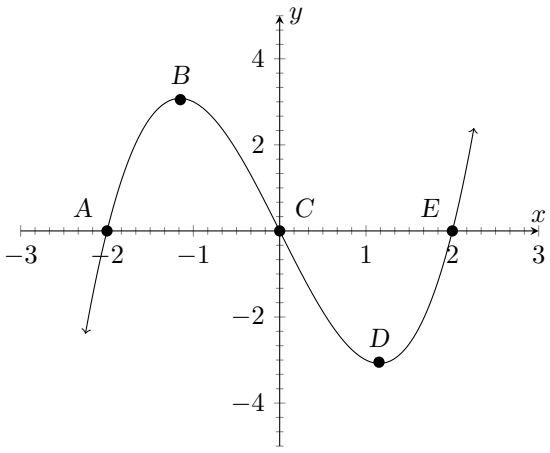
(c) C

(d) D

(e) E

Feedback(*`attempt`*): *Although more than one point can be an absolute minimum, there can be only one absolute minimum value. In other words, the same y-value can be attained on multiple x-values, but the absolute minimum is really asking about the lowest y-value attained. So you should ask yourself; which point has the lowest y-value?*

Problem 2 *Consider the following graph.*



Which of the points above is/are a local maximum?

Select All Correct Answers:

(a) A

(b) B ✓

(c) C

(d) D

(e) E

(f) *None*

Feedback(*`attempt`*): *Remember that any point that is the largest value in some small segment of the graph nearby is considered a local maximum.*

Problem 2.1 *Which of the points is/are a local minimum?*

Select All Correct Answers:

(a) *A*

(b) *B*

(c) *C*

(d) *D* ✓

(e) *E*

(f) *None*

Feedback(*`attempt`*): *Remember that any point that is the lowest value in some small segment of the graph nearby is considered a local minimum.*

Problem 2.1.1 *Which of the points is/are an absolute maximum?*

Select All Correct Answers:

(a) *A*

(b) *B*

(c) *C*

(d) *D*

(e) *E*

(f) *None* ✓

Feedback(*`attempt`*): *Remember that the arrows at the end of the graph mean that it continues in that direction forever. So any absolute maximum will be eventually passed by the upward arrow on the right, meaning that there can't actually be an absolute maximum.*

Problem 2.1.1.1 *Which of the points is/are an absolute minimum?*

Select All Correct Answers:

(a) *A*

(b) B

(c) C

(d) D

(e) E

(f) *None* ✓

Feedback(*`attempt`*): *Remember that the arrows at the end of the graph mean that it continues in that direction forever. So any absolute minimum will be eventually passed by the upward arrow on the right, meaning that there can't actually be an absolute minimum.*