

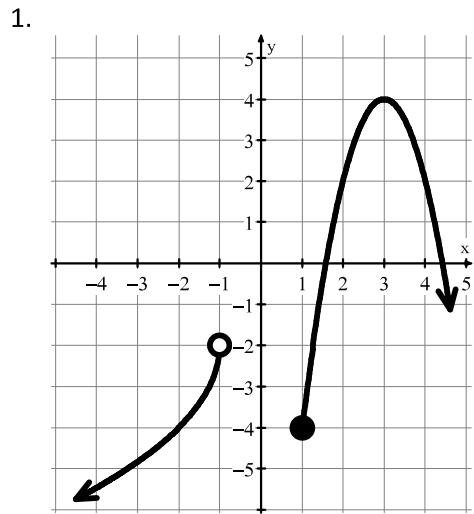
### 3.2 Practice – Extrema & Function Analysis

Name: \_\_\_\_\_

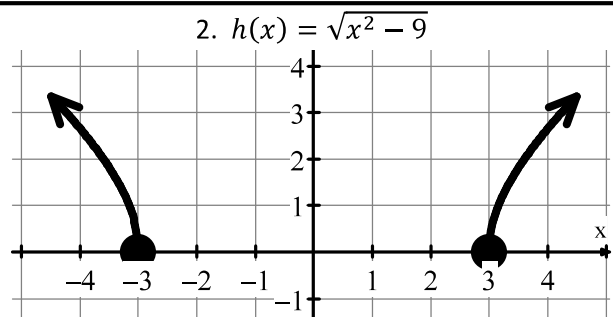
Pre-Calculus

Using the graph and/or the function's equation, find all of the following. Use Interval Notation when describing intervals. Sketch the graph if it is not given.

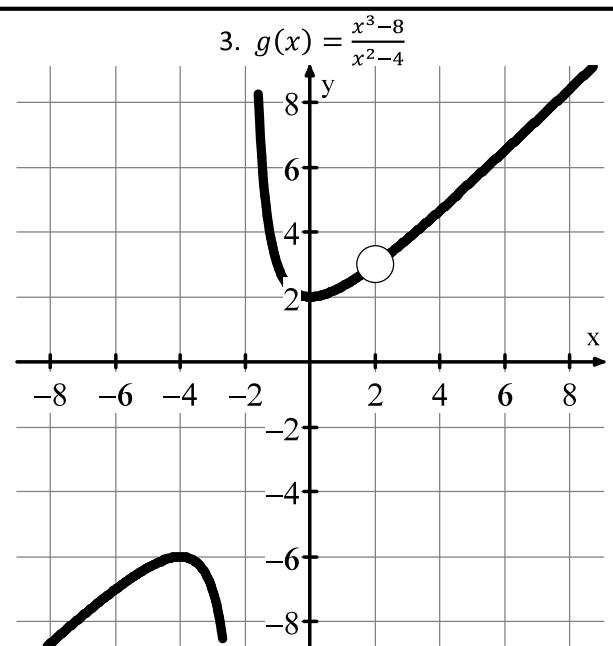
Domain:	Absolute max/min value(s): ABS MAX value = 4 ABS MIN value = None	
$(-\infty, -1) \cup [1, \infty)$		
Local max/min value(s) that are NOT absolute:		
Local MIN value = -4 Local MAX value = none		
Increasing:		
$(-\infty, -1) \cup (1, 3)$	Decreasing: $(3, \infty)$	
Left End-behavior: $\lim_{x \rightarrow -\infty} f(x) = -\infty$		
Right End-behavior: $\lim_{x \rightarrow \infty} f(x) = -\infty$		



Domain:	Absolute max/min value(s): ABS MAX value = none ABS MIN value = 0	
$(-\infty, -3] \cup [3, \infty)$		
Local max/min value(s) that are NOT absolute:		
Local MIN value = none Local MAX value = none		
Increasing:		
$(3, \infty)$	Decreasing: $(-\infty, -3)$	
Left End-behavior: $\lim_{x \rightarrow -\infty} h(x) = \infty$		
Right End-behavior: $\lim_{x \rightarrow \infty} h(x) = \infty$		

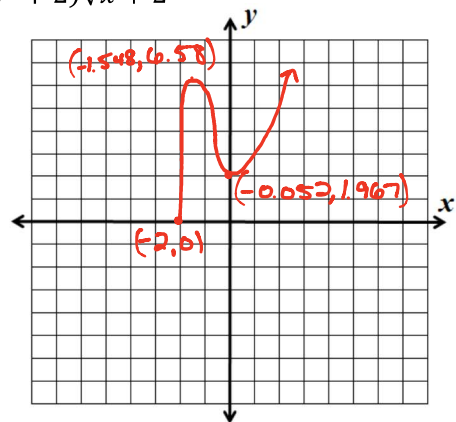


Domain:	Absolute max/min value(s): ABS MAX value = none ABS MIN value = none	
$(-\infty, -2) \cup (-2, 2) \cup (2, \infty)$		
Local max/min value(s) that are NOT absolute:		
Local max value = -6 Local min value = 2		
Increasing:		
$(-\infty, -4) \cup (0, \infty)$	Decreasing: $(-4, -2) \cup (-2, 0)$	
Left End-behavior: $\lim_{x \rightarrow -\infty} g(x) = -\infty$		
Right End-behavior: $\lim_{x \rightarrow \infty} g(x) = \infty$		



Domain: $[-2, \infty)$	Absolute max/min value(s): ABS MAX Value = none ABS MIN VALUE = $\infty$
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$$4. f(x) = 0.7(5x^2 + 2)\sqrt{x+2}$$



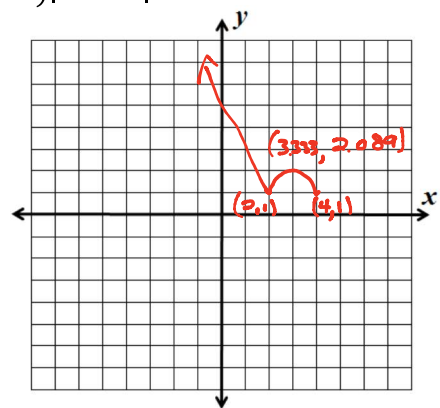
Local max/min value(s) that are NOT absolute: LOCAL MAX value = 6.58 LOCAL MIN value = 1.967
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Increasing: $(-2, -1.548) \cup (-0.052, \infty)$	Decreasing: $(-1.548, -0.052)$
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Left End-behavior: $\lim_{x \rightarrow -\infty} f(x) = \text{dne}$	Right End-behavior: $\lim_{x \rightarrow \infty} f(x) = \infty$
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Domain: $(-\infty, 4]$	Absolute max/min value(s): ABS MAX Value = none ABS MIN value = 1
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$$5. g(x) = \frac{1}{2}(\sqrt{4-x})|2x-4| + 1$$



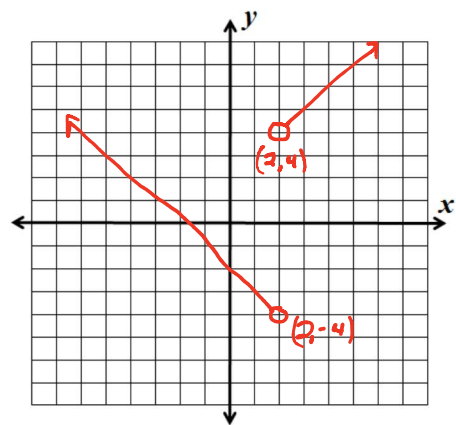
Local max/min value(s) that are NOT absolute: LOCAL MAX value = 2.089 LOCAL MIN value = none
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Increasing: $(2, 3.333)$	Decreasing: $(-\infty, 2) \cup (3.333, 4)$
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Left End-behavior: $\lim_{x \rightarrow -\infty} f(x) = \infty$	Right End-behavior: $\lim_{x \rightarrow \infty} f(x) = \text{N/A}$
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Domain: $(-\infty, 2) \cup (2, \infty)$	Absolute max/min value(s): ABS MAX Value = none ABS MIN value = none
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$$6. f(x) = \frac{x^2-4}{|x-2|}$$



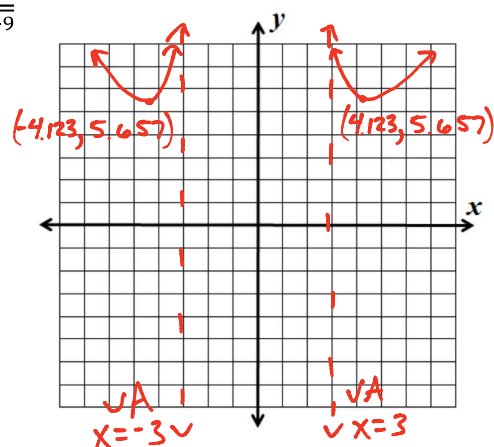
Local max/min value(s) that are NOT absolute: LOCAL MAX value = none LOCAL MIN value = none
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Increasing: $(2, \infty)$	Decreasing: $(-\infty, 2)$
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Left End-behavior: $\lim_{x \rightarrow -\infty} f(x) = \infty$	Right End-behavior: $\lim_{x \rightarrow \infty} f(x) = \infty$
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Domain: $(-\infty, -3) \cup (3, \infty)$	Absolute max/min value(s): ABS MAX Value = none ABS MIN value = 5.657
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$$7. f(x) = \frac{x^2-1}{\sqrt{x^2-9}}$$



Local max/min value(s) that are NOT absolute: LOCAL MAX value = none LOCAL MIN value = none
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Increasing: $(-4.123, -3) \cup (4.123, \infty)$	Decreasing: $(-\infty, -4.123) \cup (3, 4.123)$
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Left End-behavior: $\lim_{x \rightarrow -\infty} f(x) = \infty$	Right End-behavior: $\lim_{x \rightarrow \infty} f(x) = \infty$
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