

Extrema and First Derivative Test - Key

In problems 1-6, Find all relative extrema of the function.

1. relative minimum : $(2, -11)$	2. relative maximum : $(3, 6)$
relative maximum : $(-3, 255)$	4. relative minimum : $(0, -15625)$
3. relative minimum : $(8, -1076)$	
5. relative minimum : $(0, 3)$	6. relative minimum : $(0, -\sqrt[3]{4})$

In problems 7-9, Use a graphing utility to find graphically all relative extrema of the function.

7. relative maximum : $(-2, 10)$ relative minimum : $(0.67, 0.52)$	8. relative maximum : $(-1.26, -1.89)$
9. relative minimum : $(0.76, 0.65)$	

In problems 10-15, Find the absolute extrema of the function on the closed interval.

10. <i>abs. max</i> : $(2, 5)$ <i>abs. min</i> : $(-3, -10)$	11. <i>abs. max</i> : $(5, 6)$ <i>abs. min</i> : $(2, -3)$
12. <i>abs. max</i> : $(-2, 50)$ <i>abs. min</i> : $(-6, -318)$	13. <i>abs. max</i> : $(-5, 175)$ <i>abs. min</i> : $(-3, -81)$
14. <i>abs. max</i> : $\left(6, \frac{7}{3}\right)$ <i>abs. min</i> : $(-1, 0)$	15. <i>abs. max</i> : $(0, 9\sqrt[3]{9})$ <i>abs. min</i> : $(-3, 0)$