

1. Increasing:  $(1, \infty)$ , Decreasing:  $(-\infty, 1)$ ; Local min:  $(1, -e)$
2. Increasing:  $(-2, -1), (0, \infty)$ , Decreasing:  $(-\infty, -2), (-1, 0)$ ; Local max:  $(-1, 1)$ , Local mins:  $(-2, 0)$  and  $(0, 0)$
3. Increasing:  $(-2, \infty)$ , Decreasing:  $(-\infty, -2)$ ; Local min:  $(-2, -6\sqrt[3]{2})$
4. Increasing:  $(\frac{1}{4}, \infty)$ , Decreasing:  $(-\infty, \frac{1}{4})$ ; Local min:  $(\frac{1}{4}, -\frac{3}{4^{4/3}})$
5. Increasing:  $(-\infty, -2), (-2, 2), (2, \infty)$ , Decreasing: Nowhere; No local max/min
6. Increasing:  $(0, \infty)$ , Decreasing:  $(-\infty, 0)$ ; Local min:  $(0, 0)$
7. Increasing:  $(-\infty, 0)$ , Decreasing:  $(0, \infty)$ ; Local max:  $(0, 1)$
8. Increasing:  $(\frac{1}{\sqrt[3]{e}}, \infty)$ , Decreasing:  $(0, \frac{1}{\sqrt[3]{e}})$ ; Local min:  $(\frac{1}{\sqrt[3]{e}}, -\frac{1}{3e})$
9. Increasing:  $(0, \infty)$ , Decreasing:  $(-\infty, 0)$ ; Local min:  $(0, -\frac{\pi}{4})$