

11.6 | 연습문제 정답

01. $D\left(\frac{1}{2}, 0\right) > 0, f_{xx}\left(\frac{1}{2}, 0\right) > 0 \Rightarrow$ 극솟값 : $-\frac{1}{8}$

$D\left(-\frac{1}{2}, 0\right) > 0, f_{xx}\left(-\frac{1}{2}, 0\right) > 0 \Rightarrow$ 극솟값 : $-\frac{1}{8}$

02. $D(0, 0) < 0 \Rightarrow (0, 0, 0)$: 안장점.

$D(2, 2) > 0, f_{xx}(2, 2) > 0 \Rightarrow$ 극솟값 : -8

03. $D(1, 2) > 0, f_{xx}(1, 2) > 0 \Rightarrow$ 극솟값 : 6

04. 최댓값 e^8

05. $x = y = z = \sqrt[3]{V_0}$

06. 가로 $V_0^{1/3}$, 세로 $V_0^{1/3}$, 높이 $V_0^{1/3}$ 인 직사각상자

07. $x = \sqrt[3]{48}$, $y = \frac{\sqrt[3]{48}}{2}$, $z = \sqrt[3]{48}$

08. $x = \frac{2\sqrt{3}}{3}$, $y = \sqrt{3}$, $z = \sqrt{3}$

09. $\sqrt{\frac{5}{2}}$

10. $(3, 2, 1)$

11. 극솟값 : -1 , 최댓값 : 3

12. 최솟값 : 0, 최댓값 : 4

13. f 의 최댓값 : $f\left(1, \frac{3}{2}\right) = \frac{37}{4}$, 최솟값 : $f(-2, 2) = -9$

14. 차가운 점 $\left(\frac{1}{2}, 0\right)$ 뜨거운 점 $\left(-\frac{1}{2}, \frac{\sqrt{3}}{2}\right), \left(-\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$