

6.2 | 연습문제 정답

2023. 2. 10 업데이트

$$01. \ln(x + \sqrt{x-1}) - \frac{2}{\sqrt{3}} \tan^{-1}\left(\frac{2}{\sqrt{3}}\left(\sqrt{x-1} + \frac{1}{2}\right)\right) + C$$

$$02. \begin{cases} \sqrt{2} \ln \left| \frac{x}{\sqrt{2}} + \frac{\sqrt{x^2-2}}{\sqrt{2}} \right| + C, & 0 \leq t < \frac{\pi}{2} \\ -\sqrt{2} \ln \left| \frac{x}{\sqrt{2}} - \frac{\sqrt{x^2-2}}{\sqrt{2}} \right| + C, & \frac{\pi}{2} < t \leq \pi \end{cases}$$

$$03. \frac{1}{2} \sin^{-1}\left(\frac{x^2}{\sqrt{3}}\right) + C$$

$$04. 2\ln|x| - 3\sin^{-1}x + C$$

$$05. \frac{\sqrt{3}}{2} \tan^{-1}\left(\frac{2}{\sqrt{3}}\right)$$

$$06. \frac{2}{\sqrt{5}} \ln\left(\frac{3+\sqrt{5}}{2}\right)$$

$$07. \frac{1}{4\sqrt{5}}$$

$$08. \frac{34\sqrt{3}}{5} - \frac{52}{15}\sqrt{2}$$

$$09. \frac{\sqrt{3}}{3} \ln \left| \frac{\sqrt{2+x} - \sqrt{3}}{\sqrt{2+x} + \sqrt{3}} \right| + C$$

10. $4 \tan^{-1} \sqrt{\frac{2+x}{2-x}} - \sqrt{4-x^2} + C$

11. $-6 \sqrt[6]{x+1} - 3 \ln \left| \frac{-1 + \sqrt[6]{x+1}}{1 + \sqrt[6]{x+1}} \right| + C$

12. $-\frac{2}{3}(x+8)\sqrt{4-x} + C$

13. $\frac{\sqrt{2}}{2} \ln \left| \sqrt{2x^2 - 4x + 3} + \sqrt{2}(x-1) \right| + C$

14. $\frac{9}{2} \sin^{-1} \left(\frac{x-3}{3} \right) + \frac{1}{2} (x-3) \sqrt{6x-x^2} + C$

15. $\pm \frac{1}{3} \sec^{-1} \left(\frac{2x+3}{3} \right) + C$

16. $\frac{1}{4} (\ln(2+\sqrt{3}) - \ln(\sqrt{2}+1))$