

10.2 | 연습문제 정답

01. $\nexists \lim_{t \rightarrow 0} \left(\frac{1 - \cos \pi t}{1 - t} \mathbf{i} + \frac{1}{t} \mathbf{j} \right)$

02. $\nexists \lim_{t \rightarrow 0^+} ((\ln t) \mathbf{i} + (t \ln t) \mathbf{j})$

03. $\langle 1, 1 \rangle$

04. $\left\langle \frac{1}{2}, 0 \right\rangle$

05. $t \geq -1$ 에서 연속

06. $t \neq 0$ 에서 연속

07. $\mathbf{F}'(t) = \langle 4, 6t^2 \rangle, \mathbf{F}''(t) = \langle 0, 12t \rangle$

08. 0

09. (a) $x^2 + y^2 = 1$

(b) $\mathbf{r}\left(\frac{\pi}{3}\right) = \left\langle \frac{1}{2}, \frac{\sqrt{3}}{2} \right\rangle, \mathbf{T}\left(\frac{\pi}{3}\right) = \left\langle -\frac{\sqrt{3}}{2}, \frac{1}{2} \right\rangle$

10. (a) $\mathbf{r}'(t) = \langle 3t^2, e^{-t} - te^{-t}, 2\cos 2t \rangle$

(b) $\mathbf{T}(0) = \frac{1}{\sqrt{5}} \langle 0, 1, 2 \rangle$

11. $x = -2t, y = 1, z = \frac{\pi}{2} + t$

12. $\left\langle e^{\sin t}, \frac{1}{2}e^{t^2} \right\rangle + \mathcal{C}, \mathcal{C} = \langle C_1, C_2 \rangle$ 는 상수벡터이다.

13. $\langle 2\tan^{-1}t, \sin^{-1}t \rangle + \mathcal{C}$

14. $\left\langle \frac{1}{2} \ln \frac{3}{8}, \frac{19}{3} \right\rangle$

15. $\left\langle \frac{2}{\pi}, \ln \frac{3}{2} \right\rangle$