

実習14.7

14.4

$$\gt \text{int}(\text{sqrt}((\text{diff}(\cos^3(t), t))^2 + (\text{diff}(\sin^3(t), t))^2), t=0..2 \cdot \text{Pi})$$

$$6 \quad (1)$$

14.5

$$\gt \text{int}(\text{sqrt}((\text{diff}(\exp(t) \cdot \cos(t), t))^2 + (\text{diff}(\exp(t) \cdot \sin(t), t))^2), t=0..2 \cdot \text{Pi})$$

$$-\sqrt{2} + \sqrt{2} e^{2\pi} \quad (2)$$

14.6

(1)

$$\gt \text{int}(\text{sqrt}((\text{diff}(\cos(t), t))^2 + (\text{diff}(\sin(t), t))^2 + (\text{diff}(t, t))^2), t=0..6 \cdot \text{Pi})$$

$$6 \pi \sqrt{2} \quad (3)$$

(2)

$$\gt \text{int}(\text{sqrt}((\text{diff}(t \cdot \cos(t), t))^2 + (\text{diff}(t \cdot \sin(t), t))^2 + (\text{diff}(t, t))^2), t=0..6 \cdot \text{Pi})$$

$$3 \pi \sqrt{36 \pi^2 + 2} + \ln(3 \pi \sqrt{2} + \sqrt{18 \pi^2 + 1}) \quad (4)$$