MATH 224

Some Hints and Answers for Assignment 28

Exercises 17ace, 18ad, 19a, 20, and 21 of Chapter 7.

28abcd: Hint: Review properties of the natural logarithm function.

(a) Use parametrization $\mathbf{g}(t) = (t, t^2)$

(c) $\mathbf{g}(t) = (t, e^{2t}$.

(e) $\pi/2$.

18ad:

(a) $\mathcal{L}(\gamma) = \int_1^3 \frac{\sqrt{4+9t^{2/3}}}{3t^{1/3}}\, dt$

(d)

$$\mathcal{L}(\gamma) = \int_0^{\frac{\pi}{2}} 2\cos\frac{t}{2}\, dt = 4sin\frac{\pi}{4} - 4\sin 0 = 4\frac{\sqrt{2}}{2} = 2\sqrt{2}.$$

Solution