Javier Monge
20210008

HT #3

M. Intermedia 2

#1

$r(t) = \langle 3\sin(t), 3\cos(t), 6t \rangle$ Para $0 \le t \le 1$

$f(t) = 3\sin t \quad g(t) = 3\cos t \quad h(t) = 6t$

$f'(t) = 3\cos t \quad g'(t) = -3\sin t \quad h'(t) = 6$

$$L = \int_0^1 \sqrt{(3\cos t)^2 + (-3\sin t) + (6)^2}\, dt$$

$$L = \int_0^1 \sqrt{9\cos t^2 + 9\sin t + 36}\, dt$$

$$L = \int_0^1 \sqrt{9 + 36}$$

$$L = \int_0^1 \sqrt{45}\, dt$$

$$L = \sqrt{45}\, t \Big|_0^1 = \sqrt{45}(0) + \sqrt{45}(1) = 0 + 3\sqrt{5} \approx 3\sqrt{5} \approx 6.7082$$

6.71