

15.1-27 NO, Let  $f(x,y,z)=1$ , then the longer path gives larger number of the integral.

28 Yes, since for any parametrization of  $C$

$$\vec{r}(t) = (p(t), q(t), m(t)) \quad , \quad a \leq t \leq b$$

$$\int_C g(x,y,z) ds = \int_a^b g(p(t), q(t), m(t)) \left| \frac{d\vec{r}}{dt} \right| dt$$