

TI-nspire CX CAS computation  
of "orange peel spiral" arc length:

$$\sin(t) \cos(20t) \rightarrow x$$

$$\sin(t) \sin(20t) \rightarrow y$$

$$\cos(t) \rightarrow z$$

$$\int_0^{\pi} \text{norm} \left( \frac{d}{dt} ([x, y, z]) \right) dt$$

→	ctrl	var
$\int_{\square}^{\square} \square d\square$	menu	4 3
$\frac{d}{d\square}(\square)$	menu	4 1
DelVar	menu	1 3

My calculator instantly replied with 40.244044632

Then I deleted the x, y, z formulas:

DelVar x, y, z.

TI-89 computation of "orange peel"  
spiral" arc length:

$$\sin(t)\cos(20t) \rightarrow x$$

$$\sin(t)\sin(20t) \rightarrow y$$

$$\cos(t) \rightarrow z$$

$$\int(\text{norm}(d([x, y, z], t)), t, 0, \pi)$$

My calculator showed **BUSY** for  $\sim 20$  seconds  
before returning 40.244044632.

After that, I deleted the  $x, y, z$  formulas:

Del Var  $x, y, z$

$\rightarrow$	(STO $\rightarrow$ )
d (	(2nd) (8)
∫ (	(2nd) (7)