Example: When *not* to round

A cart begins at rest, and accelerates down a ramp with acceleration: $a = 0.518\ \text{m/s}^2$.

After 3.2 s, how far has it traveled?

Use $d = \frac{1}{2}\, a\, t^2$.

$t = 3.2\ \text{s}$

$t^2 = 10.24\ \text{s}^2$

$d = \frac{1}{2} a t^2 = 0.5(0.518)(10.24)$

$d = 2.65216\ \text{m}$

$d = 2.7\ \text{m}$ ✓ correct

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round to 2 sig figs

$t^2 = 10\ \text{s}^2$

$d = \frac{1}{2} a t^2$

$= 0.5(0.518)(10)$

$= 2.59$ m

~~$d = 2.6$ m~~ ← WRONG