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## Newton's Second Law

There are at least two ways to write Newton's Second Law:

1.  $\vec{a} = \frac{\vec{F}_{\text{net}}}{m}$

2.  $\vec{F}_{\text{net}} = m \vec{a}$

Which form best expresses the central idea of Newtonian mechanics?

A. Form 1

B. Form 2

C. They are equivalent

Please give the answer that you believe is right, regardless of what the textbook may say

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## Jules Verne, *From the Earth to the Moon* (1865)

A huge cannon fires a large hollow projectile at the moon. Inside are three people, two dogs, furniture, etc.

Verne reasoned that at least until they get close to the Moon, the people will experience normal gravity.

One of the dogs died, and they put the body out the hatch into space.



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## Jules Verne, **From the Earth to the Moon** (1865) - continued

Later they looked out of the porthole and the dog's body was still there, "floating" beside the projectile.



A. There is no problem here. Verne's Physics is good.

B. There is an inconsistency here. The dog's body will fall back towards the Earth.

C. There is an inconsistency here. The people inside the projectile will not experience gravity.