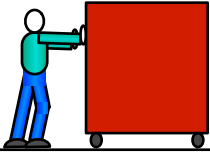


2nd Law of Motion

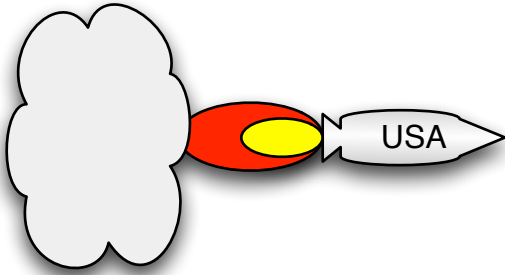
Name: _____

Solve for the missing thing. For full credit, show your work!

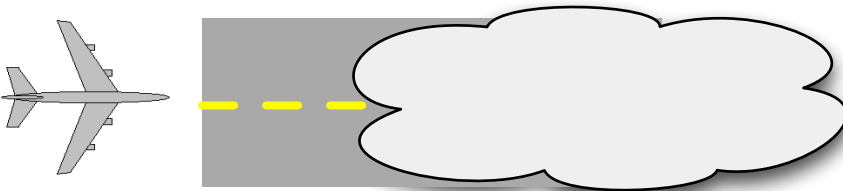
The 30 kg crate gains 2 m/s every second due to the person's push. What force is the person using?



The rocket's engines provide 1,000 N of thrust. If the rocket gains 5 m/s every second, what is its mass?

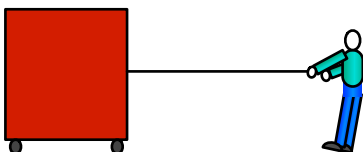


When a jet's landing gear fails, they will sometimes use foam on the runway to slow it down. If the foam provides 400,000 N of stopping force and the jet is 200,000 kg, what will the rate of slow down be?



For the jet problem above, if it lands at 200 m/s how many seconds will it be before it stops?

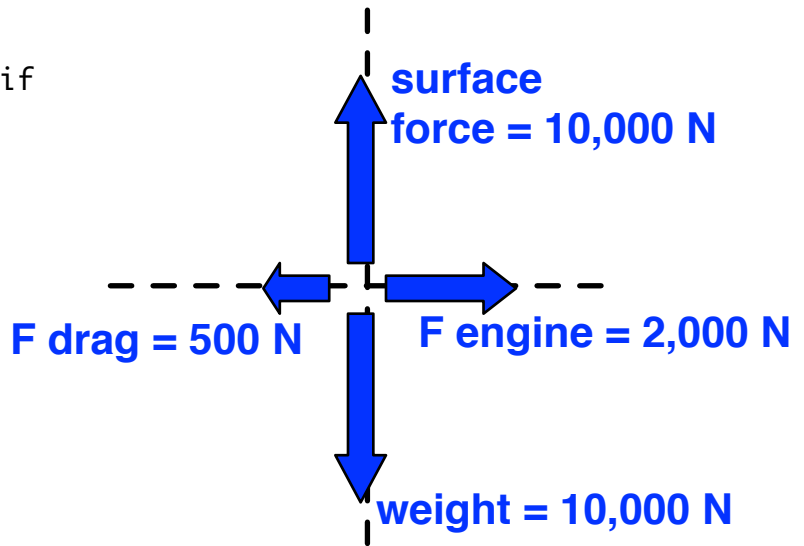
The crate speeds up from 0 m/s to 6 m/s in 2 seconds. What is its speed up rate? If the crate is 25 kg, what force did the person use?



For full credit, show your work!

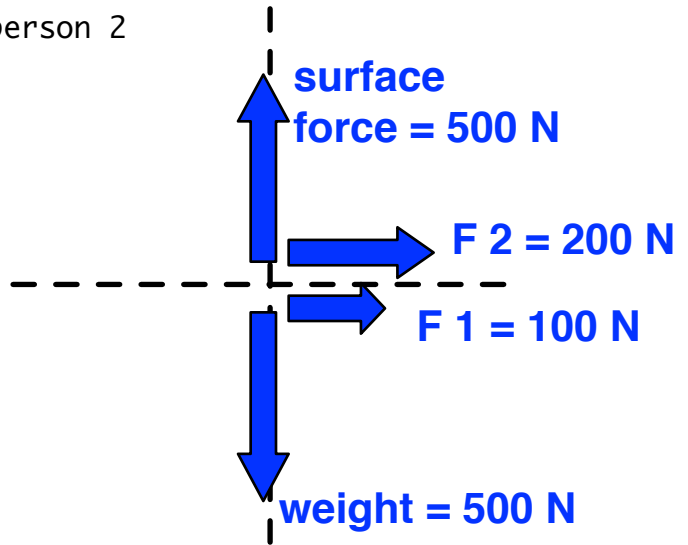
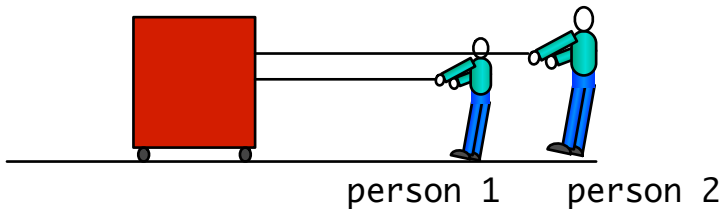
The car's engine provides 2,000 N of force to the right, but there is 500 N of drag holding it back.

- a) Find the Net Force.
- b) Find the rate of speed up if the car has 1,000 kg of mass.



Person 1 pulls with a force of 100 N; person 2 pulls with a force of 200 N.

- a) Find the Net Force.
- b) Find the rate of speed up if the box has 50 kg of mass.



The car's engine provides 5,000 N of force to the right, but there is 1,000 N of drag holding it back. (The car weighs 10,000 N.)

- a) Put the forces on the diagram, and label them like the ones above.
- b) Find the Net Force.
- c) Find the rate of speed up if the car has 1,000 kg of mass.

