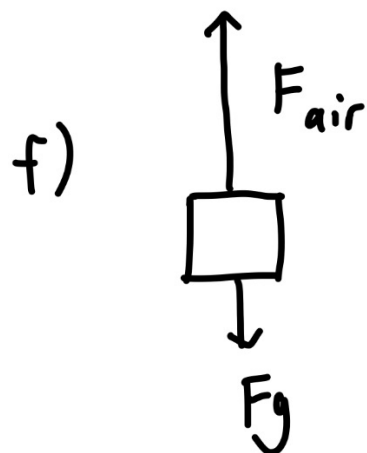
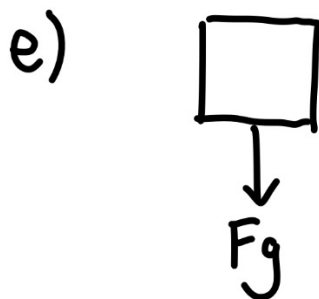
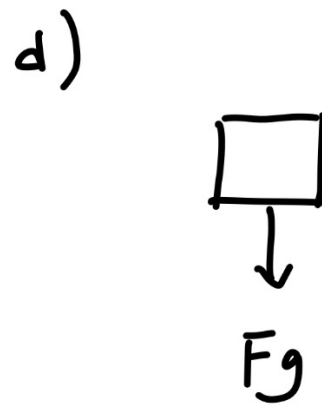
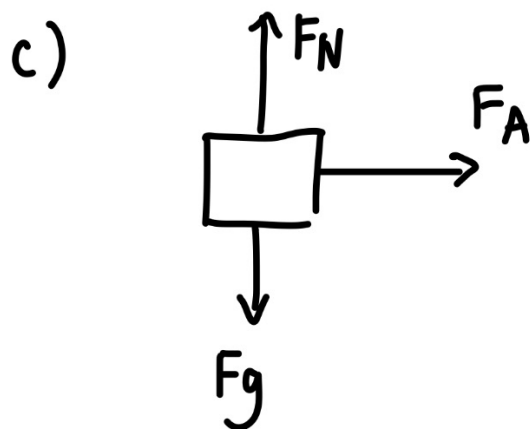
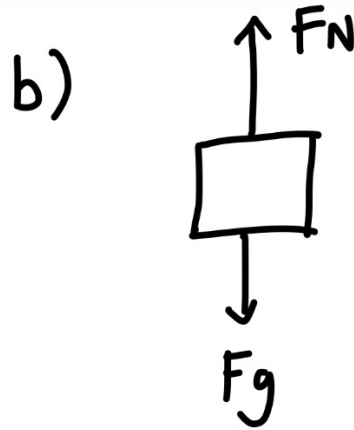
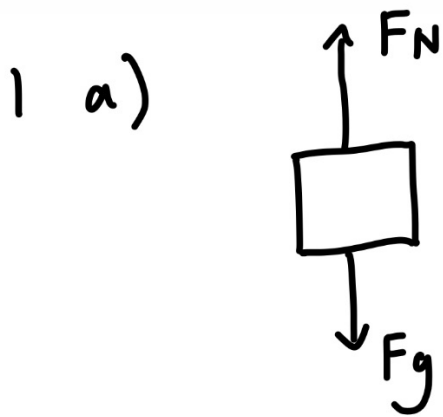


Intro to Forces and FBD answers



2

- a) A force accelerates an object. An object can be moving at constant velocity.
- b) Acceleration on earth is always $g = 9.8\text{m/s}^2$ downwards
- c) Well we saw in b) that the acceleration is $-g$ so $F_{\text{net}} = ma = -mg$
- d) Well consider a student standing and not moving on the ground. Look at the FBD of 1a). Clearly there are forces that are being exerted on the student, it's just that they balance out so the net force is 0.
- e) Force of gravity is just mg and if you take a look at the fbd for 1e) the only force that exists on this ball is the force of gravity so the net force must be downwards.
- f) Well consider a car driving left. If it starts to slow down (aka accelerate towards the right) then that means the net force must be to the right. The car is still moving left here.

3

- a) -10N or 10N [down/south]
- b) 6N
- c) -2N
- d) 7.62N 23.2° N of E