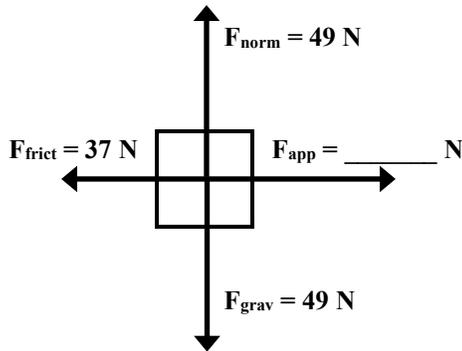## Calculating Individual Forces from Mass and Acceleration, and FBDs

Read from **Lesson 3** of the **Newton's Laws** chapter at **The Physics Classroom**:
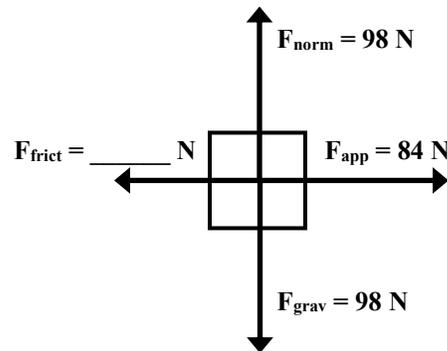
   http://www.physicsclassroom.com/Class/newtlaws/u2l3d.html
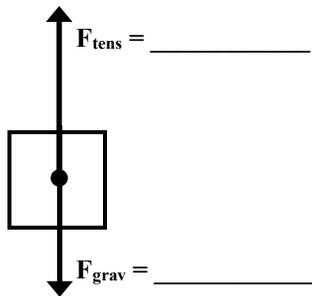
MOP Connection: Newton's Laws: Assignment NL9

1.   For the free-body diagrams below, use the acceleration value to determine the unknown values of any individual force.
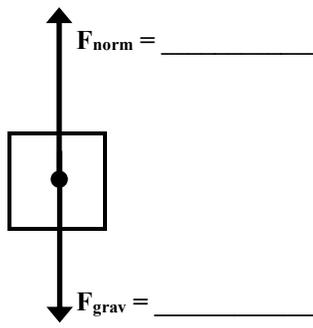
F_{norm} = 49 N

F_{frict} = 37 N F_{app} = _____ N

F_{grav} = 49 N

a = 8.0 m/s², right

m = _____ kg

F_{net} = _____ N

F_{norm} = 98 N

F_{frict} = _____ N F_{app} = 84 N

F_{grav} = 98 N

a = 4.8 m/s², right

m = _____ kg

F_{net} = _____ N

F_{tens} = _____

F_{grav} = _____

a = 5.0 m/s², up

m = 32 kg

F_{net} = _____ N

F_{norm} = _____

F_{grav} = _____

a = 2.4 m/s², up

m = 450 kg

F_{net} = _____ N

F_{tens} = _____

F_{grav} = _____

a = 4.8 m/s², down

m = 85.0 kg

F_{net} = _____ N