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[10]   **1.** A 15.0-kg object slides down an inclined plane with a degree of inclination of 38°. The coefficient of kinetic friction of the surfaces of contact is 0.21 and the coefficient of static friction of the surfaces of contact is 0.45. Assuming that no force is applied to the object, determine the acceleration of the object. Include a situation diagram and an FBD.

[10]   2. A 12.0 kg object is pushed with a force of 95.0 N up an inclined plane of 42°. If the coefficient of kinetic friction between the surfaces is 0.095, what is the acceleration of the object?

[10]   **3.** What coefficient of friction is required to keep a 5.0-kg object at rest on an inclined plane with an angle of inclination of 52°?