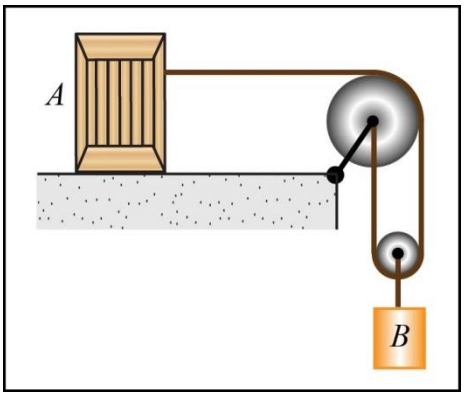
P5.9-4) Given the pulley-mass system shown in the figure, determine the tension in the rope and the friction force between crate A and the ground if block B is accelerating down at 2 ft/s^2. The weight of crate A is 10 lb and the weight of block B is 5 lb. Assume that the pulleys are weightless and frictionless.



Given:

Find:

Solution:

Draw a free-body diagram of the crate and block.

Relate the acceleration of A to the acceleration of B.

a_A = _____ a_B

Use the equation of motion for A and B to solve for the tension and the friction force.

Block B.

T = _____

Crate A.

F_{fk} = _____