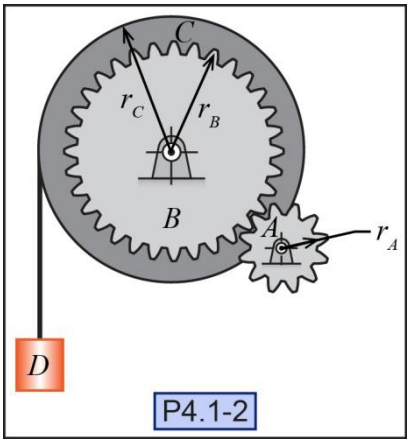
P4.1-2)[fe] It is desired that the shown hoisting mechanism be operated such that the load D is lifted at a constant rate of 2 ft/s. If the drum C, which is rigidly attached to gear B, has a radius of r_C = 4 ft and the gear ratio between B and A is 3:1, determine the angular velocity with which a motor must drive pinion gear A.



P4.1-2

Given:

Find:

Solution:

Determine the angular speed of drum C.

ω_C = _____

What is the angular speed of gear B?

ω_B = _____

Determine the angular speed of gear A.

ω_A = _____