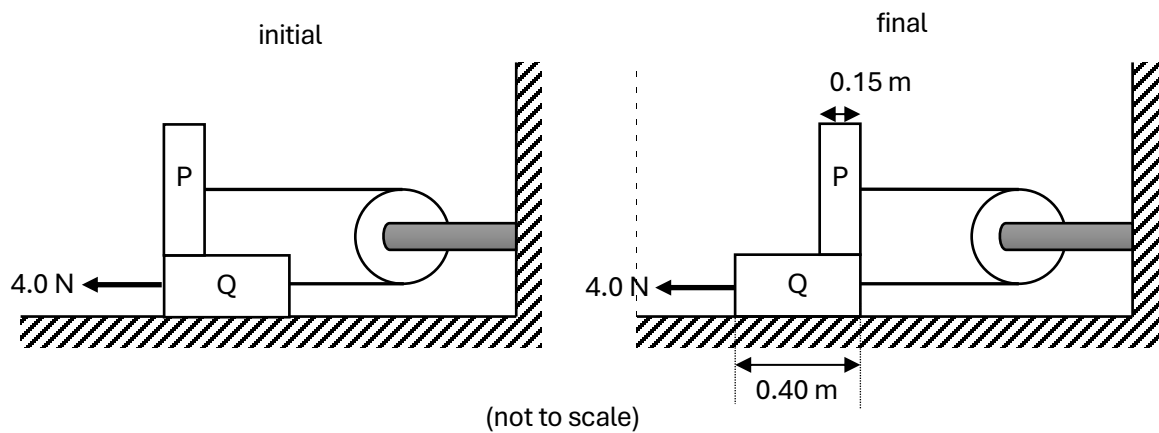**5** Block P is of mass 2.0 kg and block Q is of mass 4.0 kg. They are attached to each other by a light string wrapped around a frictionless pulley and rest on a smooth floor as shown below.

initial

final

0.15 m

4.0 N ← Q

4.0 N ← Q

0.40 m

(not to scale)

P and Q are initially at rest. The friction between P and Q is 0.8 N when there is relative motion.

How much time will it take for P to move from one edge of Q to another when a force of 4.0 N is applied to Q?

A 0.79 s
B 0.96 s
C 1.00 s
D 1.12 s