Phys 2320 Spring 2023 Problem related to Workshop 9

Main topics: Hooke's law, simple harmonic motion,
molecular dynamics, potential energy, kinetic energy

(Knight 4th Edition Problem 9.30)
A horizontal spring with spring constant 85 N/m extends outward from a wall just above floor level. A 1.5 kg box sliding across a frictionless floor hits the end of the spring and compresses it 6.5 cm before the spring expands and shoots the box back out. How fast was the box going when it hit the spring? Answer: (0.49 m/s)