

Solutions

2.1 A A biomechanical analysis must define the segment, direction and phase of movement. Net force and a single muscle force are not interchangeable. A longer lever arm can change torque without changing applied force.

2.2 Average force magnitude=momentum change/time= $120/0.40=300$ N.

2.3 False. The largest force is not the same as average force. A school movement study should not deliberately create high-impact landings to test a prediction.

2.4 impulse. impulse means Force integrated over time, equal to momentum change.

3.1 Averages are 600 and 300 N. Impulse specifies area, not force-curve shape or peak. Injury risk requires suitable evidence beyond this mechanical example; no individual recommendation follows.