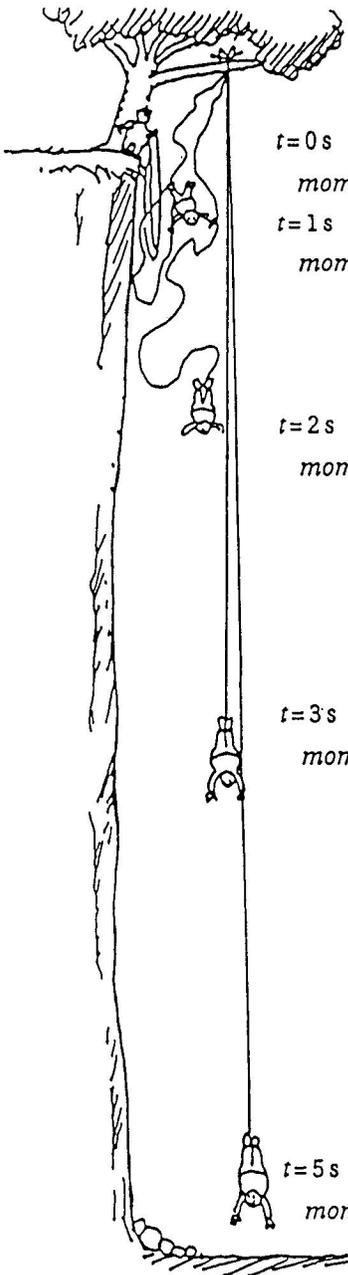


CONCEPTUAL **Physical Science** PRACTICE SHEET

Chapter 3: Momentum and Energy
Impulse—Momentum



$t = 0\text{ s}$ $v =$ _____

momentum = _____

$t = 1\text{ s}$ $v =$ _____

momentum = _____

$t = 2\text{ s}$ $v =$ _____

momentum = _____

$t = 3\text{ s}$ $v =$ _____

momentum = _____

$t = 5\text{ s}$ $v =$ _____

momentum = _____

Bronco Brown wants to put $Ft = \Delta mv$ to the test and try bungee jumping. Bronco leaps from a high cliff and experiences free fall for 3 seconds. Then the bungee cord begins to stretch, reducing his speed to zero in 2 seconds. Fortunately, the cord stretches to its maximum length just short of the ground below.

Fill in the blanks. Bronco's mass is 100 kg. Acceleration of free fall is 10 m/s^2 .

Express values in SI units (*distance* in m, *velocity* in m/s, *momentum* in kg-m/s, *impulse* in N-s, and *deceleration* in m/s^2).

The 3-s free-fall distance of Bronco just before the bungee cord begins to stretch

= _____

Δmv during the 3-s interval of free fall

= _____

Δmv during the 2-s interval of slowing down

= _____

Impulse during the 2-s interval of slowing down

= _____

Average force exerted by the cord during the 2-s interval of slowing down

= _____

How about *work* and *energy*? How much KE does Bronco have 3 s after his jump?

How much does gravitational PE decrease during this 3 s? _____

What two kinds of PE are changing during the slowing-down interval?

Draw it!