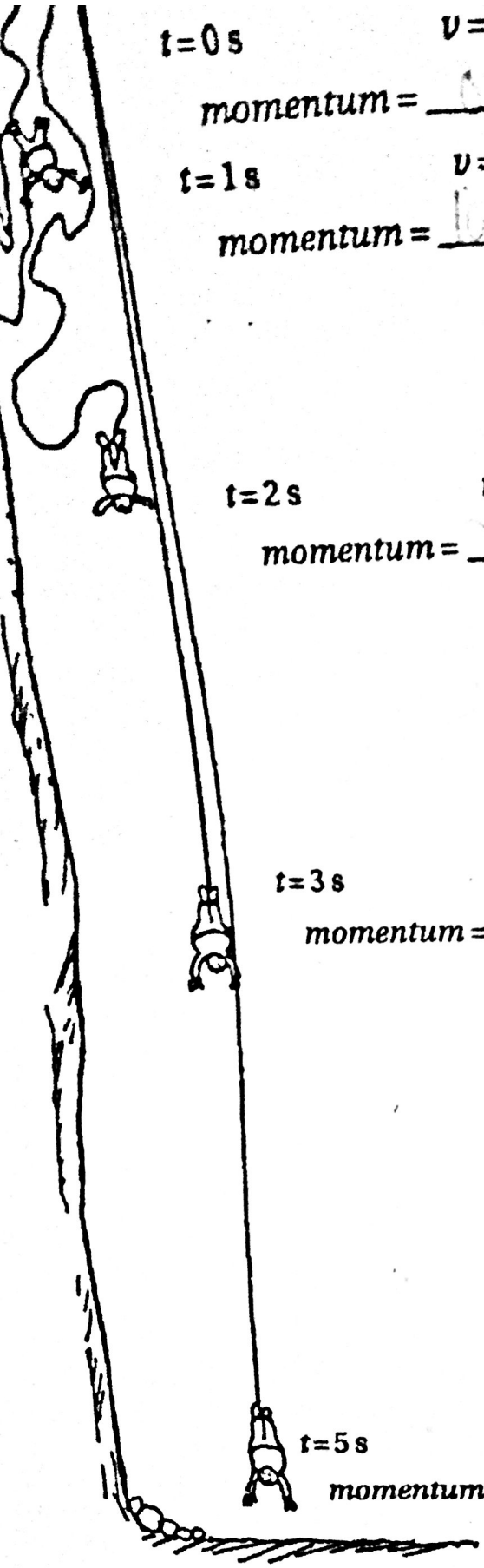


t=0 s v = _____

momentum = _____

t=1 s v = _____

momentum = _____

t=2 s v = _____

momentum = _____

t=3 s v = _____

momentum = _____

t=5 s v = _____

momentum = _____

its maximum length just short of the ground below.

Fill in the blanks. Bronco's mass is 10(Acceleration of free fall is 10 m/s².

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

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

= 45m

Δmv during the 3-s interval of free fall

= 3000 kgm/s

Δmv during the 2-s interval of slowing d

= -3000 kgm/s

Impulse during the 2-s interval of slowing

= -1500 Ns

Average force exerted by the cord during t interval of slowing down

= -1500 N

How about *work* and *energy*? How much K does Bonco have 3 s after his jump?

45,000 J

How much does gravitational PE decrease during this 3 s? 45,000 J

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

Gravitational + Strain

1. Which car has the greater acceleration? civic

2. Which car spends more time along the surface of the lot? Town car

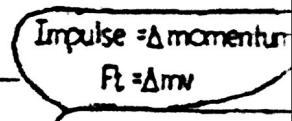
3. Which car is moving faster when it reaches the edge of the cliff? civic

4. Which car has the larger impulse imparted to it by the applied force? Defend your answer.

Town car: longer time

5. Which car has the greater momentum at the edge of the cliff? Defend your answer.

Town car: larger impulse

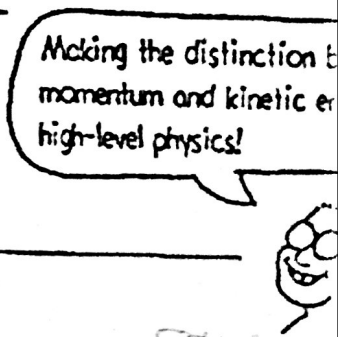


6. Which car has the greater work done on it by the applied force? Defend your answer in terms of the distance traveled.

same

7. Which car has the greater kinetic energy at the edge of the cliff? Does your answer follow from your explanation of 6? Does it contradict your answer to 4? Why or why not?

same



8. Which car spends more time in the air, from the edge of the cliff to the ground below? same

9. Which car lands farthest horizontally from the edge of the cliff onto the ground below? civic

10. Challenge: Suppose the slower car crashes a horizontal distance of 10 m from the ledge. Then at what horizontal distance does the faster car hit?

14.1m