Namo	Solutions
Name_	

8kgm/s

in VT/R

101=164

Quiz 4
Physics 141
06/24/2010

Show all work clearly and justify all answers mathematically/logically. You have 15 minutes to complete this 10 point quiz.

- A 5.0-kg mass with an initial velocity of 4.0 m/s, east collides with a 4.0-kg mass with an 1.) initial velocity of 3.0 m/s, west. After the collision the 5.0-kg mass has a velocity of 1.2 m/s, south. What is the magnitude of the velocity of the 4.0-kg mass after the collision?
 - $P_{ix} = (5.0 \text{ kg})(4.0 \text{ m/s}) (4.0 \text{ kg})(3.0 \text{ m/s}) = 8 \text{ m/s} \text{ kg}$ $2.0 \, m/s$ a. b. $1.5 \, {\rm m/s}$ Piy = 0 Piz = Psigiy + Pyingy = -6 kym/s + Pingy = 0 1.0 m/s c. 2.5 m/s d.) 3.0 m/s e. The value of the momentum of a system is the same at a later time as at an earlier time if
- 2.)

where is e.

- there are no > Pelky, x = 8 kg m/
 - collisions between particles within the system. a.
 - b. inelastic collisions between particles within the system.
 - changes of momentum of individual particles within the system. c. d.
 - internal forces acting between particles within the system.
 - external forces acting on particles of the system. e.
- The diagram below shows five cylinders, each cylinder rotating with constant 3.) angular velocity about its central axis. The magnitude of the tangential velocity of one point of each cylinder is shown, along with each cylinder's radius and mass. Which cylinder has the largest angular momentum?

