Physics 10154 - Quiz 9A

A merry-go-round has a moment of inertia of 754 kg-m^2. It is spinning at a rate of 0.565 rev/sec. A 55.0-kg child, initially at rest, jumps onto the merry-go-round and lands on the edge, 1.08 meters from the center. After the child lands on the merry-go-round, both child and merry-go-round move with the same angular speed.

a) What is the new angular speed of the system, in rev/sec?
b) What is the change in kinetic energy of the system?