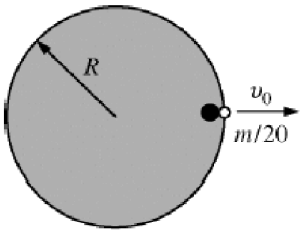


Top View

Side View

1. A large circular disk is initially stationary on a horizontal icy surface. A person stands on the edge of the disk. Without slipping on the disk, the person throws a large stone horizontally at initial speed v_o relative to the ground from a height h above the ice in a radial direction, as shown in the figures above. Consider the x-direction to be horizontal, and the y-direction to be vertical. Consider the system consisting of the person, ball, and disk. "Initial" refers to before the ball is thrown; "final" refers to the instant before the ball hits the ground.

Linear momentum in the x-direction

Initial p (one bar per object) | J | final p (one bar per object)

0

Justification:

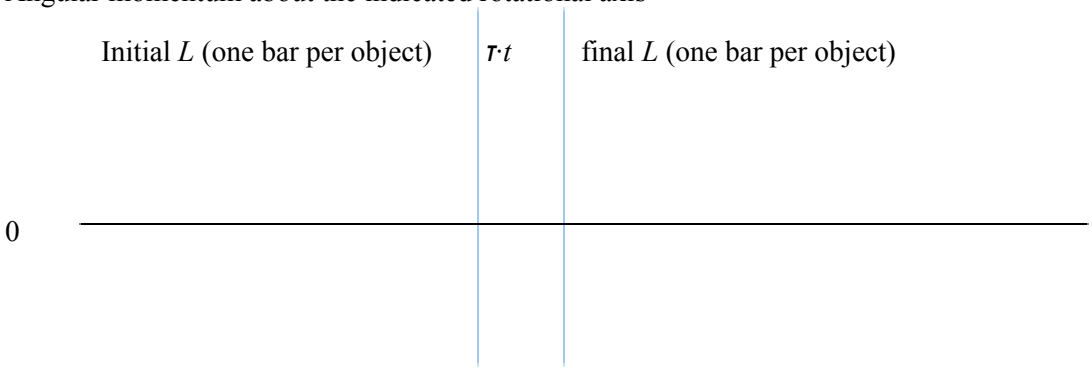
Linear momentum in the y-direction

Initial p (one bar per object) | J | final p (one bar per object)

0

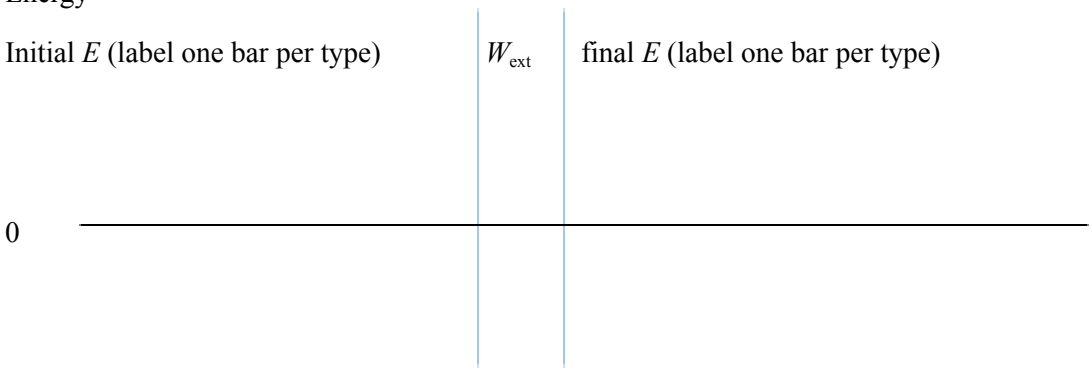
Justification:

Angular momentum about the indicated rotational axis



Justification:

Energy



Justification: