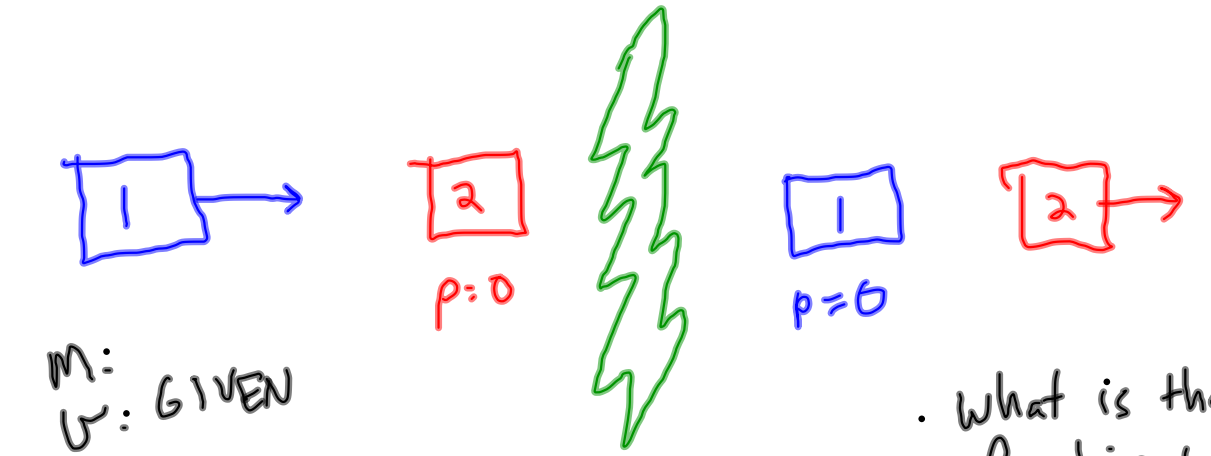
Conservation of Momentum Problems:



M:
v: GIVEN

- what is the velocity of object 2?
- what is the mass of object 2?

total momentum before the collision

=

total momentum after the collision

Bregar is running: 1.5 m/s ; mass = 80 kg.
Bryon is standing still. BOOM! After, Bryon flies off 2 m/s. Mr. Bregar STOPS.

(a) What is Bregar's p BEFORE? 5 STEPS

① $v = 1.5$ m/s $m = 80$ kg
② p
③ $p = m \cdot v$
④ $p = 80 \cdot 1.5 = 120$
⑤ $p = 120 \frac{kg \cdot m}{s}$

(b) What is Bryon's p AFTER? * NO 5 STEPS! *

$120 \frac{kg \cdot m}{s}$

(c) What is Bryon's mass? 5 STEPS

① $p = 120 \frac{kg \cdot m}{s}$ $v = 2 \frac{m}{s}$
② m
③ $m = p \div v$
④ $m = 120 \div 2 = 60$
⑤ $m = 60$ kg

SCRAWNY. (Bryon Bo don)