

9.4 Collisions in 2D

Collisions at 90 degrees are the simplest to solve. Use Pythagorean theorem and the inverse tangent ratio to solve the resultant vector formed by the perpendicular impulse vectors.

$$a^2 + b^2 = c^2$$

$$\theta = \tan^{-1}(\text{opp}/\text{adj})$$

If you are solving a collision at angles other than 90°, the momentum of each object must be broken down into horizontal and vertical (x and y) components and treated separately. Once the total horizontal and total vertical momentums are calculated, the resultant momentum can be calculated.

**** In two dimensional collisions where no external net force acts on the system, the momentum of the system in both the x and y directions remains constant****

Jacinta:

<http://spiff.rit.edu/classes/phys311.old/lectures/coll2d/coll2d.html>

This site takes you through the basics, equations and show you everything in a step by step formation. it also gives examples

Quinten:

Rogie:

Lindsey:

Izaak: