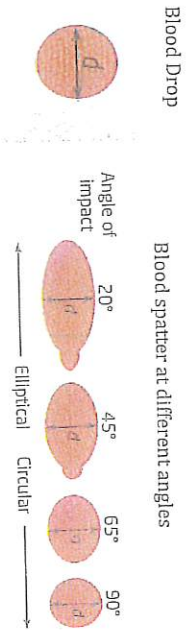


# Blood Spatter Analysis

(To be complete with class).

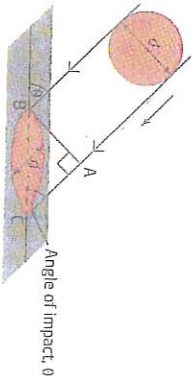
## Blood Spatter Basics

Forensic scientists can recreate an accident or crime by examining bloodstains. A blood droplet starts out in the shape of a sphere. When it falls straight down to the floor, it usually forms a circle with the same diameter as the sphere. However, when blood hits the floor at an angle, due to the force of a blow, the circle becomes elongated into a shape called an ellipse. The ellipse's width is the same as the sphere's diameter, but because of the force in the direction of motion, its length is greater than the sphere's diameter.



Follow this link to view animations of blood spatter  
<http://www.aestic.org/links/animations/Images/blood%20spatters.swf>

## Blood Spatter & Trigonometry



The angle of impact  $\theta$  is the acute angle formed by the path of the blood drop and the floor.

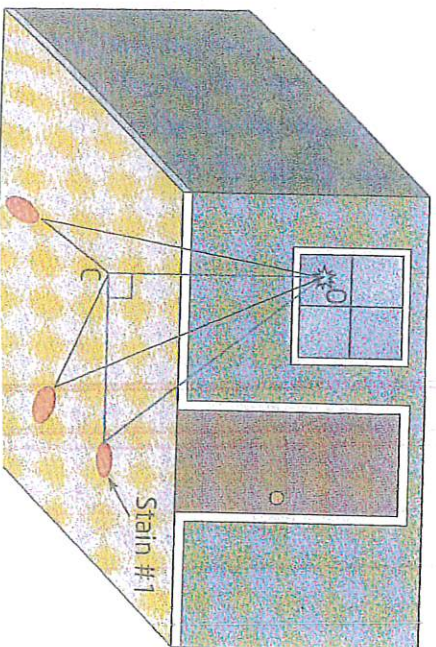
$$\sin \theta = \frac{d}{BC}$$

Where  $d$  is the width of the blood drop.

$BC$  is the length of the blood drop.

## Blood Spatter example (Complete with class)

Three bloodstains from a victim are shown. The point of convergence,  $C$ , has been found by extrapolating the directions of these stains along the floor. The origin of the blow,  $O$  is some height above  $C$ .



Forensic Analysis of Stain #1 provides the following data.

Length of bloodstain:	.....	4.2 cm
Width of bloodstain:	.....	2.6 cm
Distance from point of convergence	.....	2.1 m

- Using the information about one of the blood droplets from above determine the angle of impact of the blood.
- Use the angle of impact and distance of convergence to determine the height of the impact.