Angle of Impact **Name: _____**

Learning Target: Date: _____ Block: _____

5. I will calculate the angle of impact and point of origin for blood spatter.

Procedures:

1. Complete the fill-in-the-blank section below and then use the directions to calculate the angle of impact for the problems below (Use the following PDF for assistance).

Fill-in-the-blank:

Highlight the _____ and type your answer!

When blood comes into contact with another surface, it adheres or _____ to it.

Point of impact may appear _____ and _____ compared to the rest of the drop of blood spatter.

_____ - keeps blood moving in the direction it was traveling.

As a droplet moves _____ from the source, it _____ and may produce a thinner, _____ - like appearance.

The _____ points in the direction of the blood's movement.

_____ or _____ drops may appear in the _____ direction of a moving droplet of blood.

Angle of Impact:

When an investigator accurately measures the _____ and _____ of a bloodstain, the impact can be calculated by using the _____ formula below.

Angle of Impact = Inverse Sin of the Width divided by the Length

AOI = Sin^{-1} W/L

Example: If the Length of a blood droplet is 5.9 cm and the width is 2.6 cm, then to calculate the AOI, you would take the inverse Sin of 2.6 / 5.9.

AOI = Sin^{-1} 2.6 / 5.9 = 26.2^{O}

Make sure your calculator is in DEGREES

Your Turn!

Length of Blood Droplet	Width of Blood Droplet	AOI
2.8 cm	**2.1 cm**	**48.6^{O}**
7.2 cm	**7.1 cm**	
0.5 cm	**0.3 cm**	
5.4 cm	**2.2 cm**	
4.4 cm	**3.9 cm**	

7.4 cm	**6.4 cm**	
8.1 cm	**2.1 cm**	
3.2 cm	**2.9 cm**	
6.2 cm	**3.8 cm**	
3.1 cm	**3.1 cm**	

Conclusion Questions:

1. What shape does blood have in flight?
    a.
2. When measuring angles of blood droplets, those angles are _____ (acute or obtuse).
3. When blood strikes a surface from a perpendicular angle, the stain will be _____.
4. Blood that strikes a surface at less than 90^{o} will be _____.
5. In the table below, draw the approximate shapes of blood droplets dropped at the corresponding angles:

10^{o}	30^{o}	45^{o}	90^{o}

6. When blood strikes a surface from a sharp angle, there are sometimes secondary splashes. What are they called?
    a.
7. What component of the blood spatter indicates the direction of spray?
    a.
8. What type of math do we use to calculate AOI?
    a.