Name:

Date:

School:

Facilitator:

5.02 Chromatography Virtual Lab (50 Points)

# Part 1: Prelab

1. How does the composition of ink allow us to use chromatography to separate inks? (5 points)

|  |
| --- |
| *Write your response below:* |
|  |

1. Describe the process of chromatography. (4.5 points)

|  |
| --- |
| *Write your response below:* |
|  |

# Part 2: Data

**Fill in the table below using information from your lab. Do not fill in the shaded cells.** (17.5 points, 0.5 points per cell)

| **Marker** | **Felt tip or black stick?** | **Describe chromatograph in distilled water** | **Describe chromatograph in ethanol** | **Describe chromatograph in acetone** | **Describe chromatograph in butanol** | **Do any chromatographs match the evidence?** |
| --- | --- | --- | --- | --- | --- | --- |
| Mr. Sketch |       |       |       |       |  |       |
| Crayola |       |       |       |       |  |       |
| Sharpie |       |       |       |       |  |       |
| Bic Round |       |  |       |       |       |       |
| Paper Mate |       |  |       |       |       |       |
| Bic Ballpoint |       |  |       |       |       |       |
| Ransom Note |       |       |       |       |       |  |

# Part 3: Analysis

1. Which pen most likely wrote the ransom note? Justify your answer using evidence. (6 points)

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| --- |
| *Write your response below:* |
|  |

1. Which solvent was the most helpful in helping to determine the ink in the note? Explain why. (6 points)

|  |
| --- |
| *Write your response below:* |
|  |

1. Why would distilled water be a poor choice as a solvent for the ransom note ink? Explain. (5 points)

|  |
| --- |
| *Write your response below:* |
|  |

1. If none of the inks had matched the ransom note, what could you conclude? Explain your answer. (6 points)

|  |
| --- |
| *Write your response below:* |
|  |