Name_____   Date_____

# NUMB3RS ACTIVITY: The Burden of Proof is on you!

FBI Agent Don Eppes is working to solve a case regarding the bizarre deaths of 3 immigrant women. His team is considering all the help in the case they can get, including the services of a psychic. Don's brother, mathematics professor Charlie Eppes, believes the mathematical approach is best and doesn't believe the psychic even has the ability he claims. The FBI has considered 4 potential suspects in this case for varying reasons, but no arrest can be made until they have enough information related to motive, opportunity, and physical evidence for each suspect. Meanwhile, Samuel Kraft, the psychic, continues to lend credible evidence he does have the ability to help as Charlie tries to expose him as a fraud every step of the way.

Flowcharts: *Proving triangles congruent or proving a suspect murdered the victims can be done using flowcharts.*

*What might the proof look like when showing triangles are congruent?*

(S) AB ≅ CD
..........GIVEN..........

(A)   B ≅   D
..Vertical·Angles·≅..

(S) BC ≅ BC
Reflexive

ABC ≅ CDE
SAS
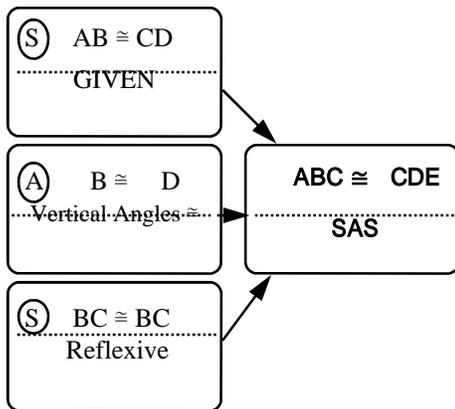
What might the proof look like when showing a suspect is guilty?

(M) He would make millions if the victim is dead!

(O) Witnesses saw him at a restaurant 1 block away.

(P) His fingerprints are on the gun and his DNA is found on the victim.

Arrest the Suspect!
There is enough evidence to believe he could be convicted.
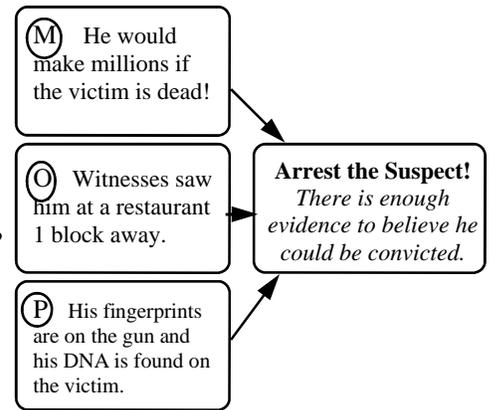

Don's FBI team is considering four suspects in this murder case. Look at the **M**otive, **O**pportunity, and **P**hysical evidence for each to determine if they should make an arrest.

Coyote: (Illegal Immigrant Smuggler)

(M)

(O)

(P)

circle one

DON'T ARREST

TOO EARLY

ARREST HIM

Citizen Border Guard: (Leader– Mr. Winnard)

(M)

(O)

(P)

circle one

DON'T ARREST

TOO EARLY

ARREST HIM

M		M	

circle one

DON'T ARREST

TOO EARLY

ARREST HIM

O		O	

circle one

DON'T ARREST

TOO EARLY

ARREST HIM

P		P	
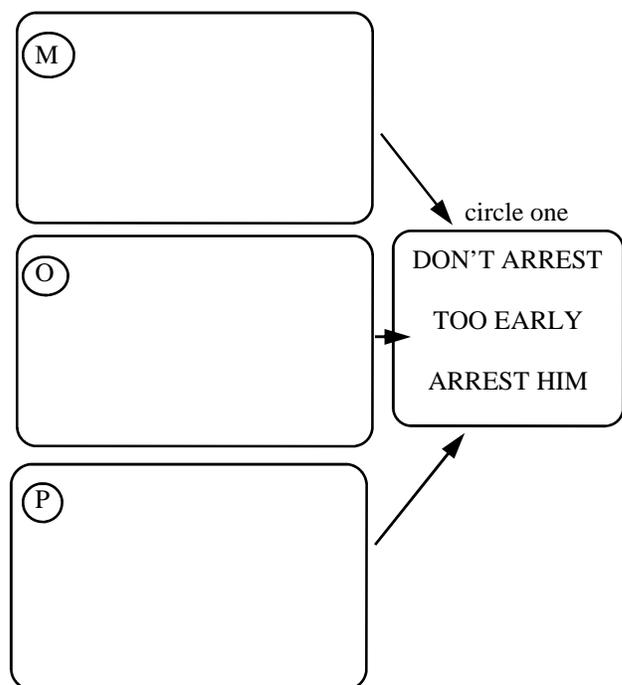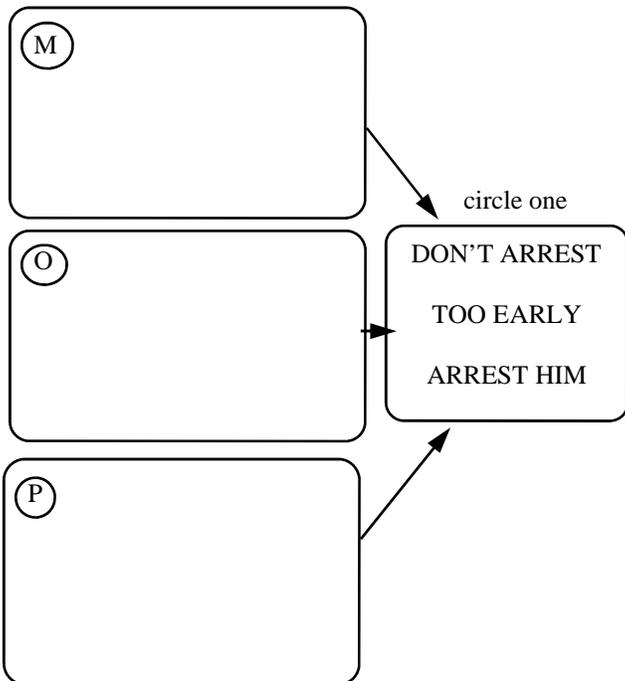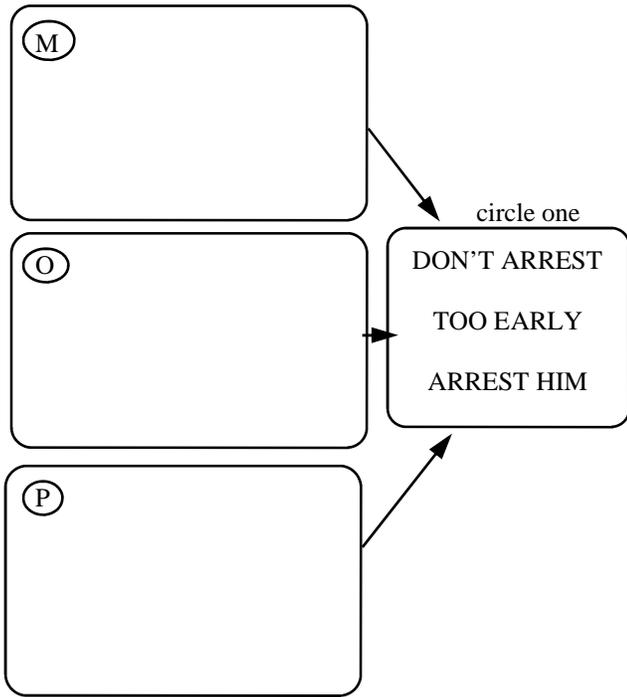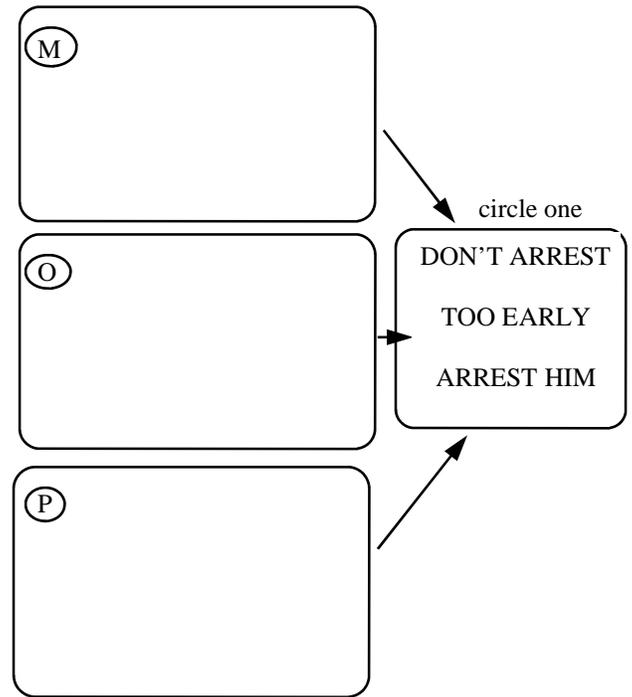
Practice Using Triangle Congruence Proof

In the accompanying diagram, $\overline{HK}$ bisects $\overline{IL}$ and $\angle H \cong \angle K$. Prove $\triangle HIJ \cong \triangle KLJ$.

K
I
J
H
L

A $\angle H \cong \angle K$

Given

A

$\triangle HIJ \cong \triangle KLJ$

S
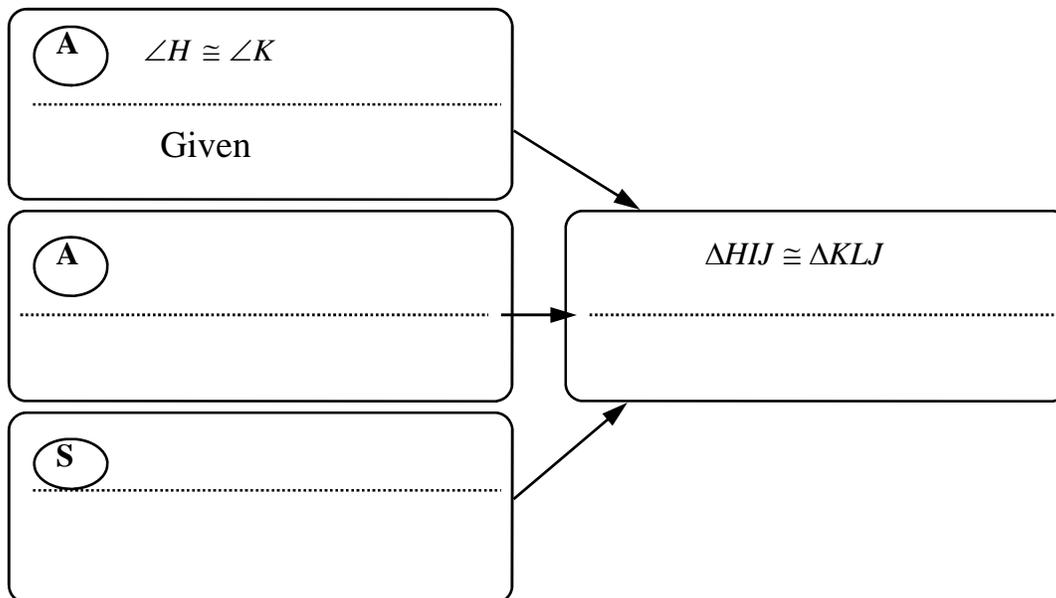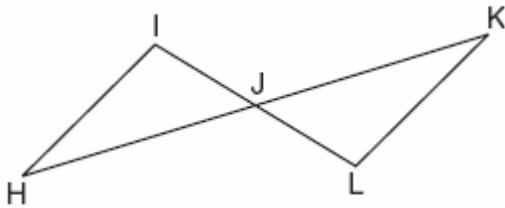
Charlie, discussing the case over dinner with his family, mentions the idea of a "logic diagram" to help in his thinking about the case. The 3 victims were all from the same village of Metapan, El Salvador, but did not know each other. They each went to Tecate, Mexico only to then cross the border to the U.S. before they died. Using the map below, fill in the logic diagram.

Why were the 3 girls killed in the U.S.?

Where the victims died...

U.S./Mexico Border

Tecate, Mexico

Why did they all stay in Tecate for a day?

What is so significant about them all coming from this village?

Metapan, El Salvador