

## Working Logic Puzzles

Translate each sentence in the following puzzles into a conditional (you may use symbols such as money  $\rightarrow$  yearbook). Then in the space provided to the left of each sentence write numbers to indicate the sequence the sentences will be in when linked. Use a "C" with the number if a contrapositive is needed. Finally, write the "theorem" (in a full sentence) on the line at the end of each puzzle.

- (1) 2 People have a lot of money, if they buy a yearbook.  $\text{yearbook} \rightarrow \$$   
4c Someone without a TV doesn't live in a house.  $\sim \text{TV} \rightarrow \sim \text{house}$   
1 All students buy yearbooks.  $\text{student} \rightarrow \text{yearbook}$   
5 Everyone with a TV watches "The Simpsons".  $\text{TV} \rightarrow \text{Simpsons}$   
6c People who are not smart don't watch "The Simpson".  $\text{smart} \rightarrow \sim \text{Simpsons}$   
3 A person who has a lot of money lives in a house.  $\$ \rightarrow \text{house}$

Theorem: Students are ~~are~~ smart (If you're a student, then you're not smart)

- (2) 3 Because you aren't an elephant, you don't like peanuts.  $\sim \text{elephant} \rightarrow \sim \text{peanuts}$   
6c If you aren't lonely, you have many friends.  $\sim \text{lonely} \rightarrow \text{friends}$   
4 You are strange if you don't like peanuts.  $\sim \text{peanuts} \rightarrow \text{strange}$   
1 All animals with feathers are birds.  $\text{feathers} \rightarrow \text{birds}$   
5 Strange people don't have many friends.  $\text{strange} \rightarrow \sim \text{friends}$   
2c No birds are elephants.  $\text{elephants} \rightarrow \sim \text{birds}$

Theorem: Feathered animals are lonely (If an animal has feathers, then they are lonely.)

- (3) 5 You don't play well if you're not happy.  $\sim \text{happy} \rightarrow \sim \text{play}$   
1 Because the sun is out, it probably won't rain.  $\text{sun} \rightarrow \sim \text{rain}$   
4c When you are happy, it means you didn't have to run.  $\text{happy} \rightarrow \sim \text{run}$   
2 If there's no rain, you must have soccer practice.  $\sim \text{rain} \rightarrow \text{soccer}$   
6 Since you don't play well, you don't start the next game.  $\sim \text{play} \rightarrow \sim \text{start}$   
3 As a result of having soccer practice, you're required to run.  $\text{soccer} \rightarrow \text{run}$

Theorem: If the sun is out, then you don't start the next game.

- (4) 1 You can't do splits when you are not flexible.  $\sim \text{flexible} \rightarrow \sim \text{splits}$
- 3c With make-up you are a dancer.  $\text{make-up} \rightarrow \text{dancer}$
- 6c You wear short skirts if you are a cheerleader.  $\text{cheerleader} \rightarrow \text{short skirts}$
- 4c Every girl wears make-up.  $\text{girl} \rightarrow \text{make-up}$
- 5 If you are not a girl, then you don't wear short skirts.  $\sim \text{girl} \rightarrow \sim \text{short skirts}$
- 2c All dancers can do the splits.  $\text{dancer} \rightarrow \text{splits}$

Theorem: Inflexible people are not cheerleaders ( $\sim \text{flexible} \rightarrow \sim \text{cheerleader}$ )

- (5) 2 You love sports when you are an adventurous person.  $\text{adventurous} \rightarrow \text{sports}$
- 4c Those who don't like the Houston Rockets don't like basketball.  $\sim \text{Rockets} \rightarrow \sim \text{b-ball}$
- 6 In order to be considered a cool person, you have to like Steve Francis.  $\text{Steve} \rightarrow \text{cool}$
- 3 All sports lovers love basketball.  $\text{sports} \rightarrow \text{b-ball}$
- 1 Because you like roller coasters, you are an adventurous person.  $\text{roller coasters} \rightarrow \text{adventurous}$
- 5 Since you like the Houston Rockets, then #3 Steve Francis should be your favorite person.  $\text{Rockets} \rightarrow \text{Steve}$

Theorem: Roller coaster lovers are cool. (If you like roller coasters, then you are cool.)

- (6) 5 Due to the fact that you are happy, you have many friends.  $\text{happy} \rightarrow \text{friends}$
- 3 Since you do a sport, you are healthy.  $\text{sport} \rightarrow \text{healthy}$
- 6c All people who don't live long lives don't have many friends.  $\sim \text{live} \rightarrow \sim \text{friends}$
- 2 Everyone who can swim can do a sport.  $\text{swim} \rightarrow \text{sport}$
- 4 Being healthy will make you happy.  $\text{healthy} \rightarrow \text{happy}$
- 1 You swim because you float.  $\text{float} \rightarrow \text{swim}$

Theorem:

If you can float, you will live a long life.