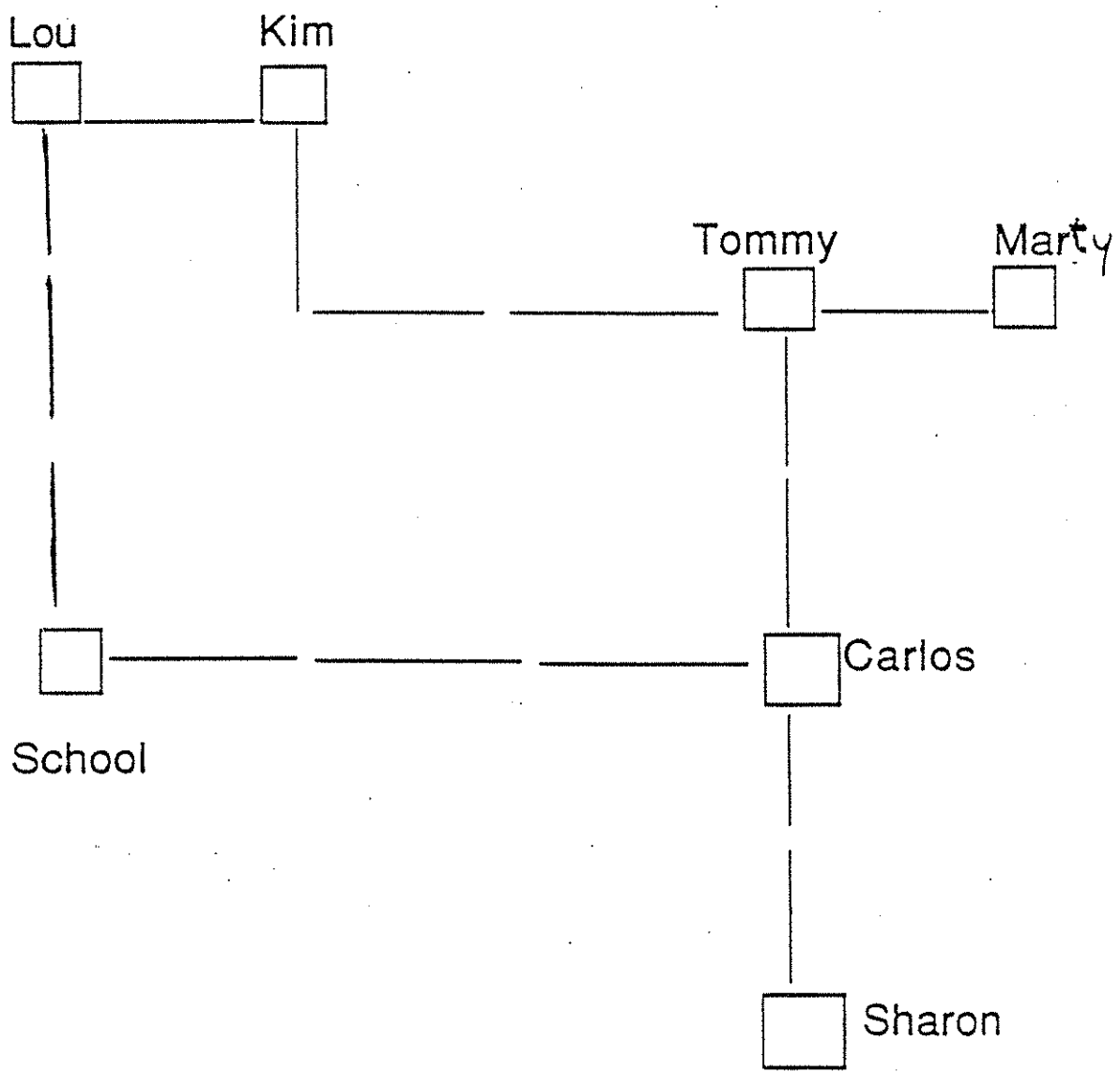


Map Study Sheet

Study the map below carefully. Every line is a block and every square is a building. Later you will be asked several questions about these locations.



Word Study Sheet

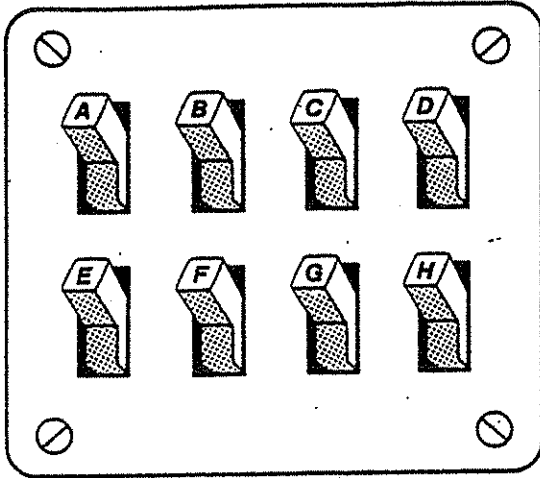
Study the sentences below carefully. They will tell you where six children live and where their school is. Later you will be asked several questions about these locations.

Tommy lives two blocks north of Carlos and one block west of Marty. Carlos is three blocks east of the school and two blocks north of Sharon. Lou lives three blocks north of the school and one block west of Kim.

Quiz Sheet

1. _____ How many blocks apart are Marty and Lou?
2. _____ How many blocks from school is Sharon?
3. _____ Who lives the second closest to Tommy?
4. _____ Who is the farthest from school?
5. _____ How many blocks between Carlos and Marty?
6. _____ How many blocks between Tommy and Lou?
7. _____ Who lives closest to Kim?
8. _____ Who lives farthest from Carlos?

SWITCH PLAY



Sir Plutus Cratt has just had one of those newfangled electronic wall safes installed in his study. In place of the usual combination lock and dial, it has eight ordinary up-down switches labeled A to H as shown.

The instructions that came with the safe are simple enough. To open it, all Sir Plutus has to do is set each switch either up or down so that each of the following conditions is true:

1. Neither B nor C is the same as D.
2. G is down only if E is not the same as H.
3. A and G are different if (but only if) E and G are in the same positions.
4. G is down if D is down, but G is up if B is down.
5. D is up, unless E is the same as F.
6. A is not the same as B if either A or E is down.
7. A, F, and G are not all the same.

It may or may not confuse the burglars, but it has certainly confused Sir Plutus. How should he set the switches to open the safe?

The Most Challenging "Castle" Puzzle

Many years ago, an elderly king, his son and daughter, weighing 195 pounds, 105 pounds, and 90 pounds, respectively, were kept prisoners at the top of a high tower in Grimsley Castle. The only communication with the ground below was a cord passing over a pulley with a basket at each end. When one basket rested on the ground the other was opposite the window. Naturally, if one basket was more heavily loaded than the other, the heavier would descend; but if the excess on either side was more than fifteen pounds, the descent would become dangerous, because it would be so rapid that none of the prisoners could control it. The only thing available to help them in the tower was a cannonball, weighing 75 pounds. Still, they managed to escape. How did they do it? (Our thanks go out to Professor Hoffmann, who wrote this puzzle over a hundred years ago in his great book, *Puzzles Old and New*.)

