

Math 156 – Who’s Breaking the Law?

Here’s the law:

If you are driving in a school zone, your speed must be 30 km/h or less.

Here are four scenarios:

- A: Jill is driving at 80 km/h down the Pat Bay highway.
- B: Peter has just parked his car at Mayfair Mall.
- C: Rich is driving at 50 km/h past Sir James Douglas elementary school.
- D: Pat is driving at 30 km/h past Mount Doug high school.

Let’s fill in a table:

	Driving in school zone?	Speed is ≤ 30 km/h?	Law-abiding?
A	no	no	yes
B	no	yes	yes
C	yes	no	NO!
D	yes	yes	yes

Using logical symbols:

Let p = “You are driving in a school zone.”

Let q = “Your speed is 30 km/h or less.”

“If p , then q ” in logical symbols is written as $p \rightarrow q$, and its truth table is

p	q	$p \rightarrow q$
0	0	1
0	1	1
1	0	0
1	1	1

← if first one is true and second is false, you are breaking the law