

## Answer to Question #72464, Math / Discrete Mathematics

Let  $p$  and  $q$  be the propositions.

$p$ : You drive over 65 miles per hour.

$q$ : You get a speeding ticket.

Write these propositions using  $p$  and  $q$  and logical connectives (including negations).

a) You do not drive over 65 miles per hour.

b) You drive over 65 miles per hour, but you do not get a speeding ticket.

c) You will get a speeding ticket if you drive over 65 miles per hour.

d) If you do not drive over 65 miles per hour, then you will not get a speeding ticket.

e) Driving over 65 miles per hour is sufficient for getting a speeding ticket.

f) You get a speeding ticket, but you do not drive over 65 miles per hour.

g) Whenever you get a speeding ticket, you are driving over 65 miles per hour.

Answer:

a)  $\sim p$

b)  $p \wedge \sim q$

c)  $p \rightarrow q$

d)  $\sim p \rightarrow \sim q$

e)  $p \rightarrow q$

f)  $q \wedge \sim p$

e)  $q \rightarrow p$

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