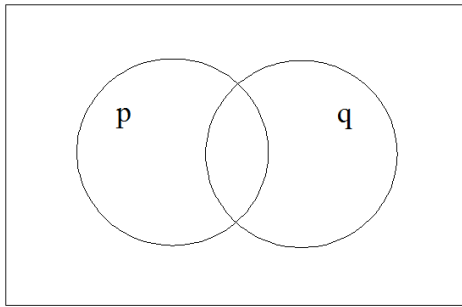


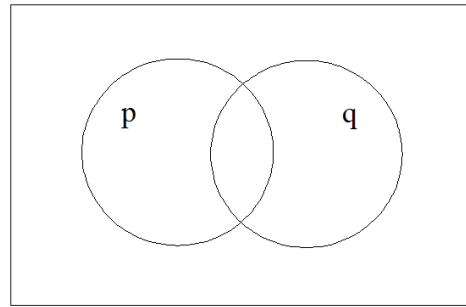
Math 156 – Venn Diagrams Worksheet

Venn Diagrams with Two Propositions

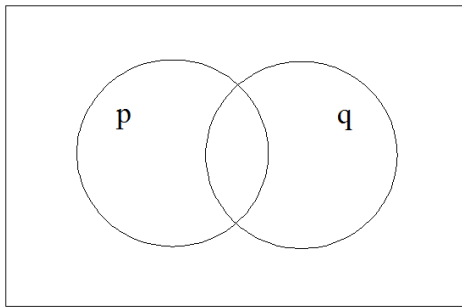
Shade in the following diagrams according to the proposition labeled below them:



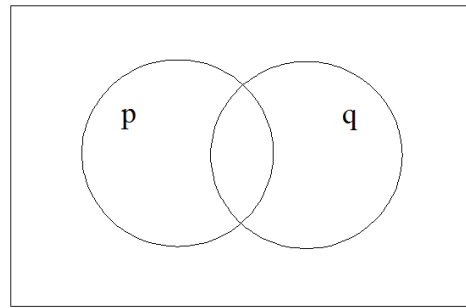
p



q

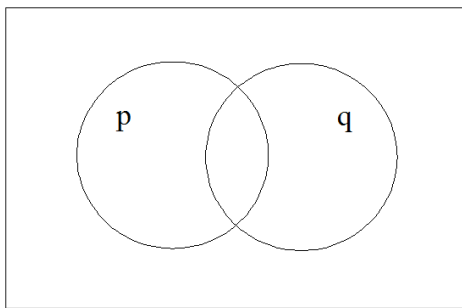


$p \vee q$

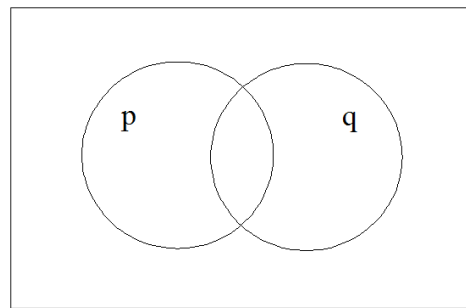


$p \wedge q$

Negation of Venn Diagrams

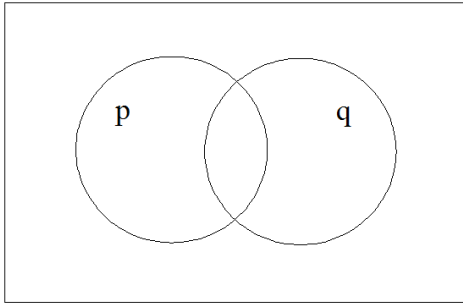


$\sim p$

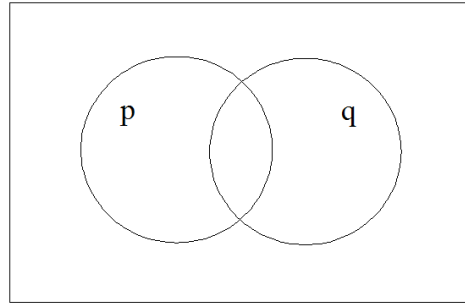


$\sim p$

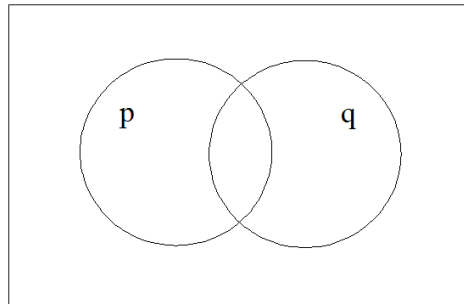
Let's do a more complicated one by steps: $\sim p \wedge \sim q$



$\sim p$

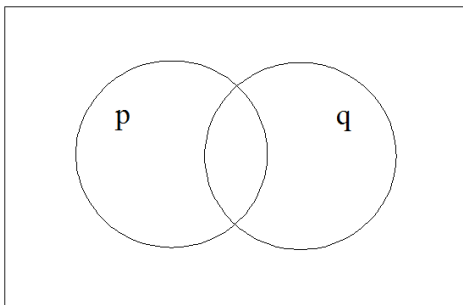


$\sim q$

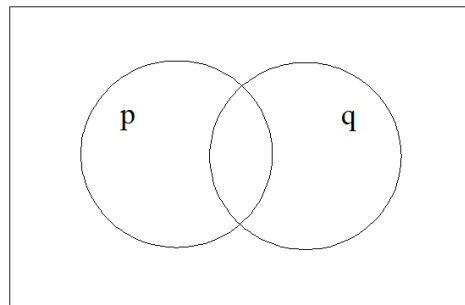


$\sim p \wedge \sim q$

Another example: $\sim (p \vee q)$



$p \vee q$

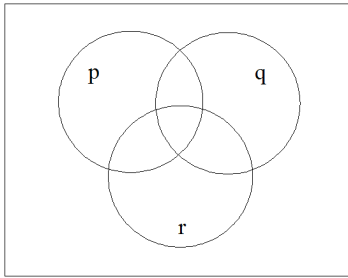


$\sim (p \vee q)$

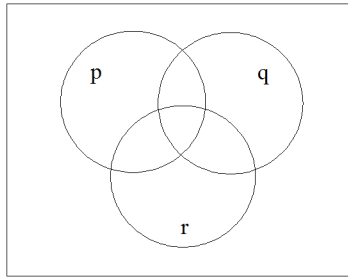
What do you notice about the results of the last two exercises?

Venn Diagrams with Three Propositions

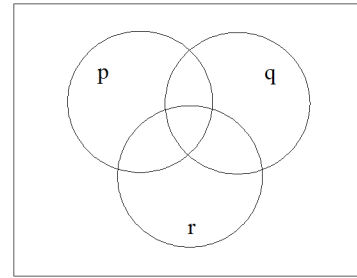
Shade in the following diagrams according to the propositions labeled below them:



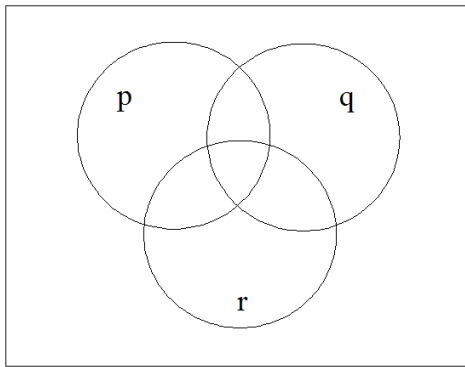
p



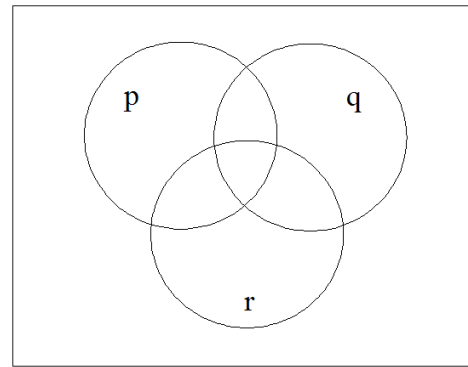
q



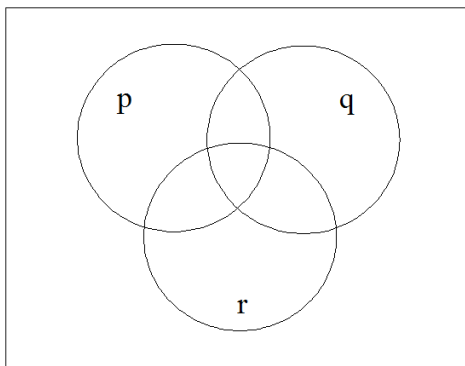
r



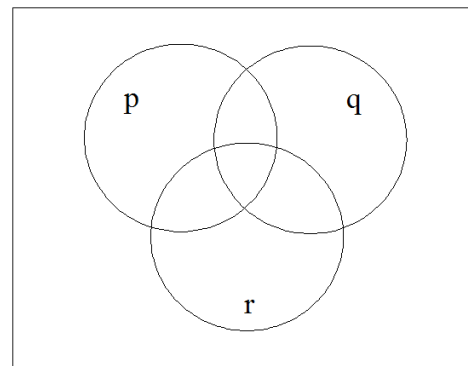
$p \wedge q$



$p \wedge q \wedge r$



$(p \wedge q) \vee r$



$(p \wedge q) \vee \sim r$

A full example with three sets:

Represent $\sim (p \vee \sim r) \vee \sim q$ on the following Venn diagram by shading in the appropriate regions. Show intermediate steps on separate sketches and label them clearly.

