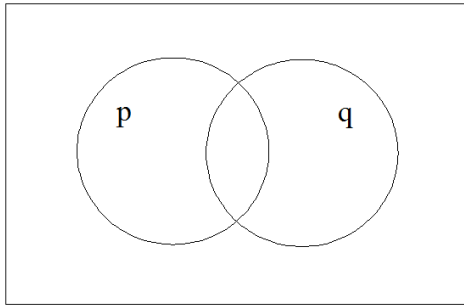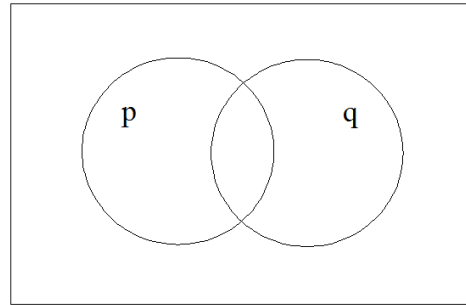# Math 156 – Venn Diagrams Worksheet
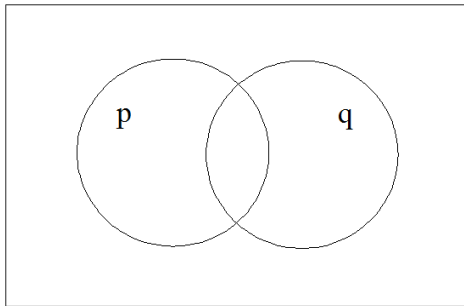
Venn Diagrams with Two Propositions

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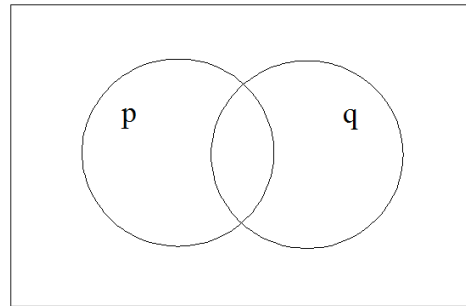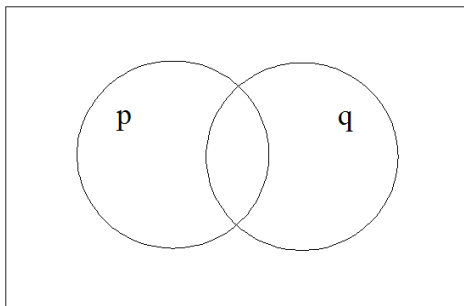
p

q

$p \vee q$
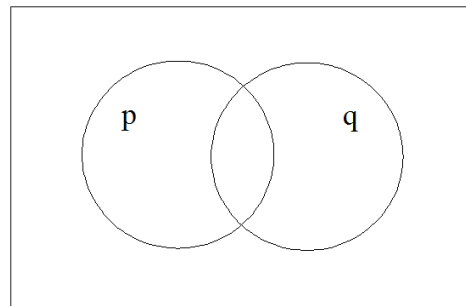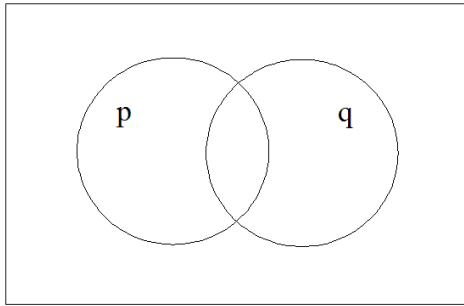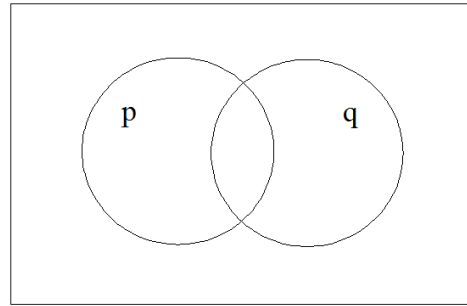
$p \wedge q$

Negation of Venn Diagrams
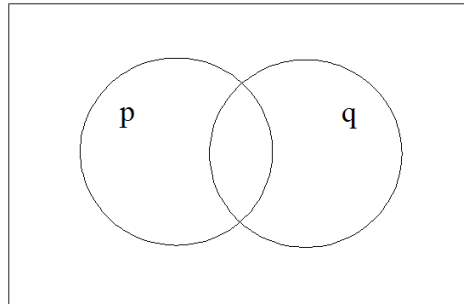
p

$\sim p$

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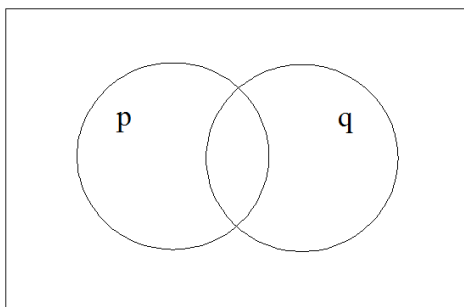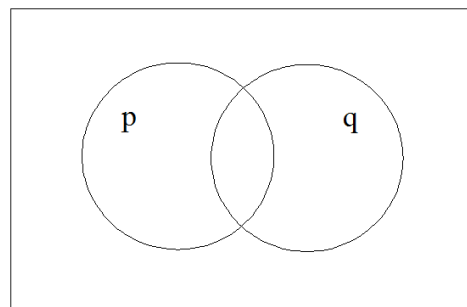

$\sim p$

$\sim q$

$\sim p \wedge \sim q$

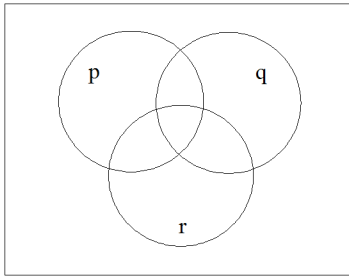Another example: $\sim (p \vee q)$

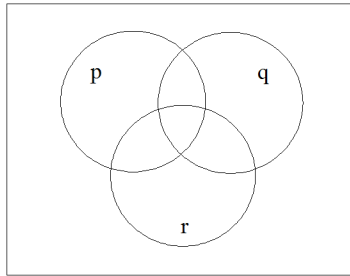
$p \vee q$

$\sim (p \vee q)$

What do you notice about the results of the last two exercises?
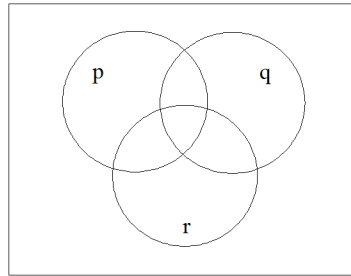
Venn Diagrams with Three Propositions

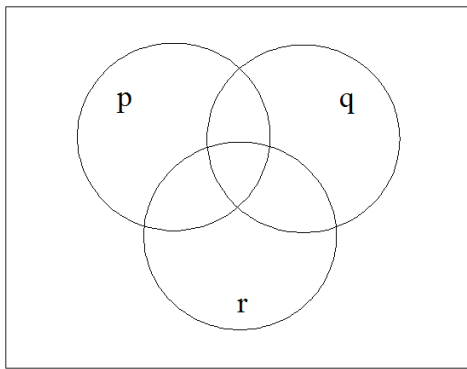Shade in the following diagrams according to the propositions labeled below them:
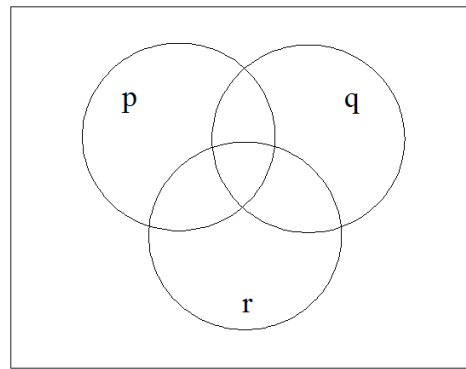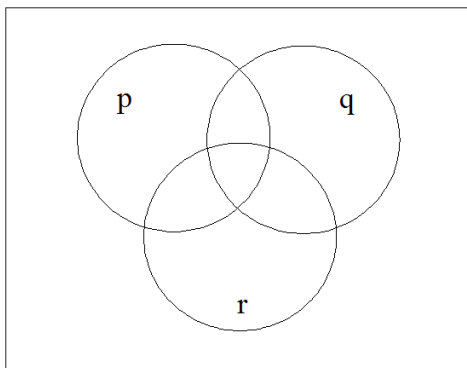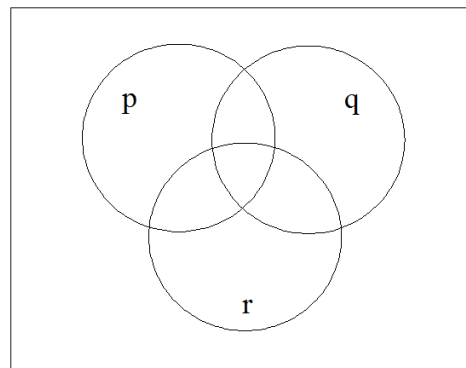
p

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 propositions:

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.