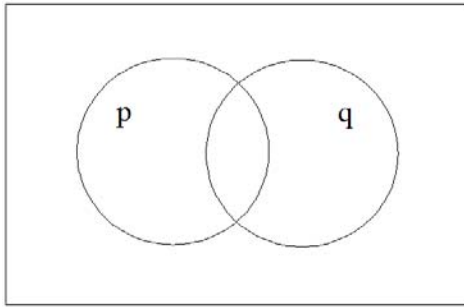


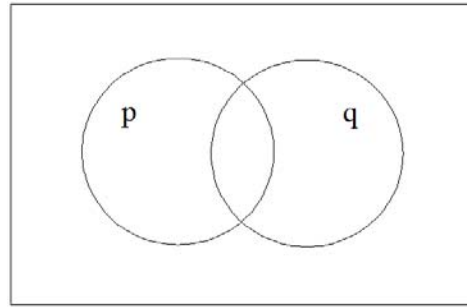
# Math 155 – Venn Diagrams Worksheet

## Venn Diagrams with Two Propositions

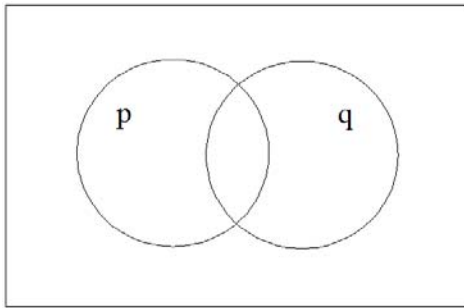
Shade in the following diagrams according to the proposition labeled below them:



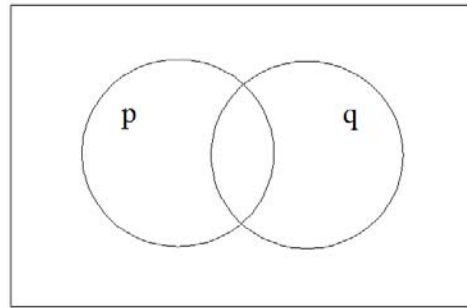
$p$



$q$

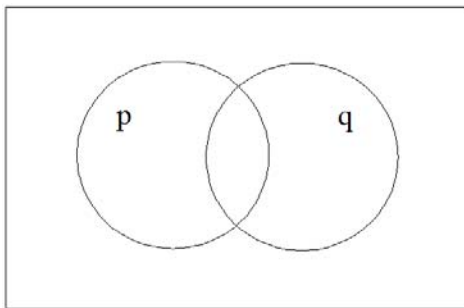


$p \vee q$

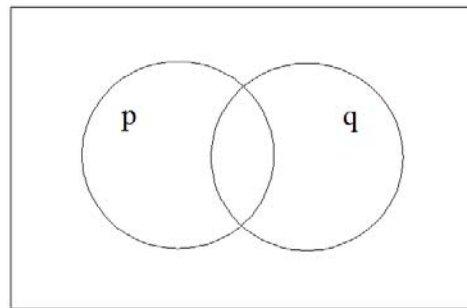


$p \wedge q$

## Negation of Venn Diagrams

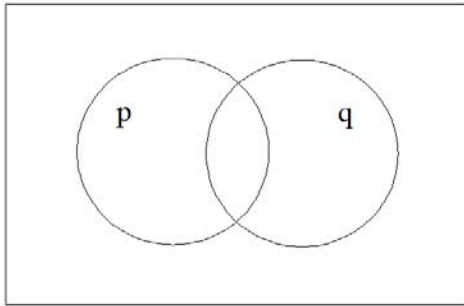
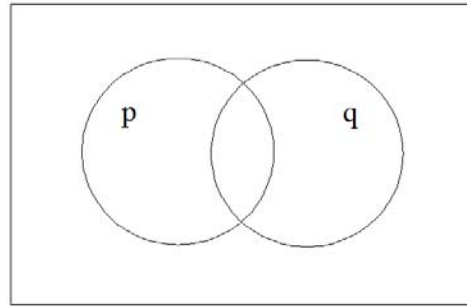
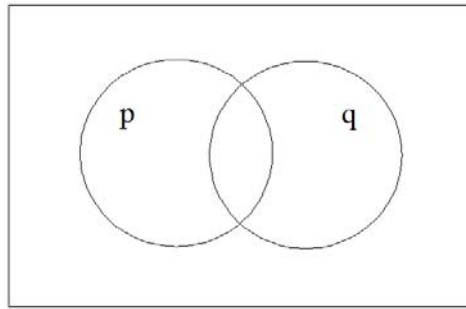


$\bar{p}$

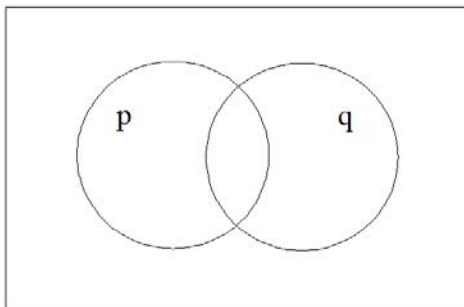
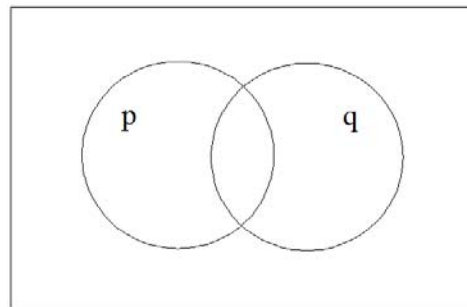


$\bar{q}$

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

 $\bar{p}$  $\bar{q}$  $\bar{p} \wedge \bar{q}$ 

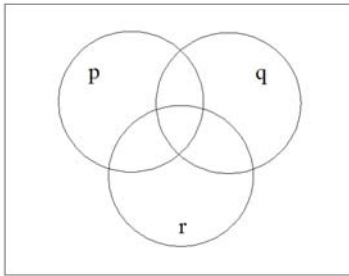
Another example:  $\overline{p \vee q}$

 $p \vee q$  $\overline{p \vee q}$ 

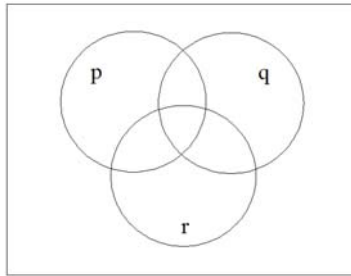
What do you notice about the results of the last two exercises?

### Venn Diagrams with Three Propositions

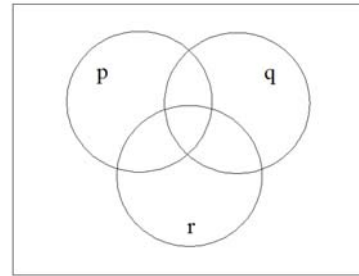
Shade in the following diagrams according to the propositions labeled below them:



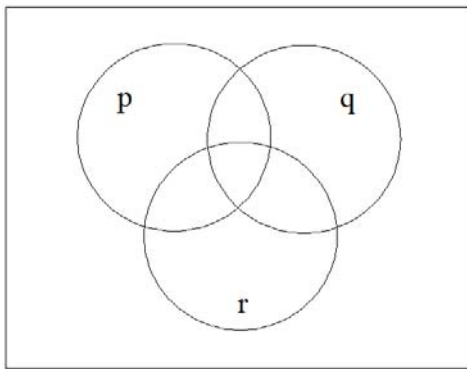
$p$



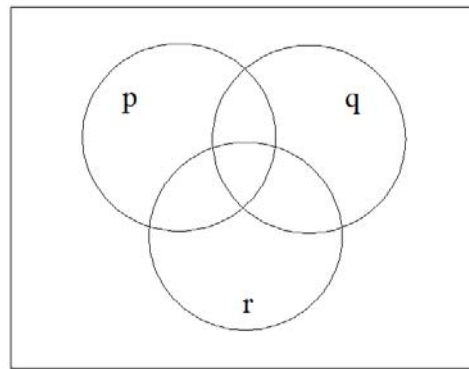
$q$



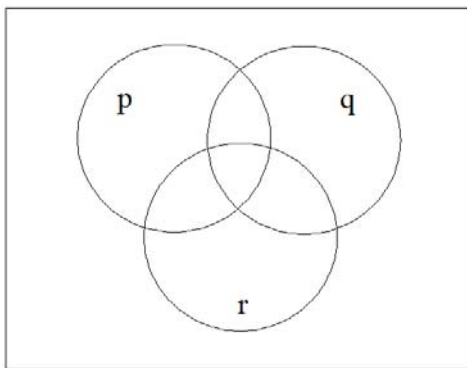
$r$



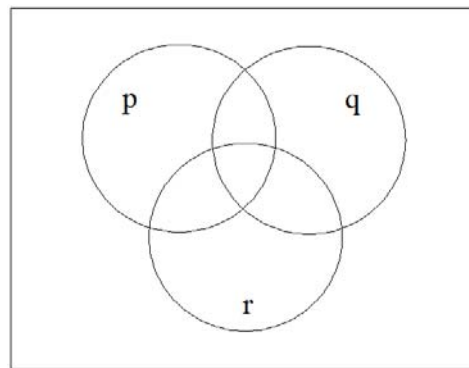
$p \wedge q$



$p \wedge q \wedge r$



$(p \wedge q) \vee r$



$(p \wedge q) \vee \bar{r}$