Comparing Distributions Worksheet   Name:_____
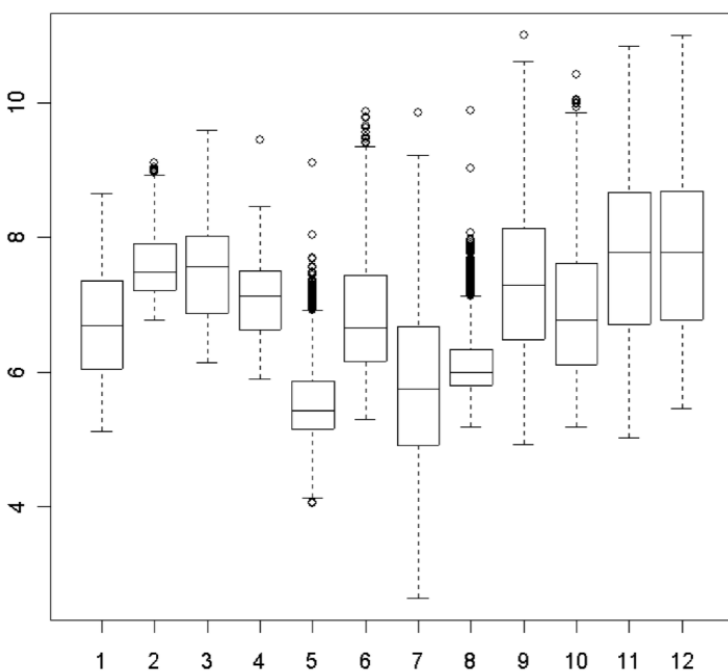
A big part of genetics research today involves attempting to identify specific genes that are being heavily expressed in situations of interest. This type of Research has enabled scientists to develop crops which produce greater yields, are resistant to various diseases, and have many other benefits. Each of the following Boxplots represent the amount of expression (in $\log_2$(Pixels)) from many repeated measurements of a specific gene from a micro-array experiment. Genes with an unusually high level of expression, in comparison to all other genes being studied, must play an important role in the scientific process we are investigating.

1. Which gene(s) has(have) the...

    Largest Median   _____
    Largest IQR   _____
    Largest Range   _____

    Smallest Median   _____
    Smallest IQR   _____
    Smallest Range   _____

2. Which gene's boxplots have outliers?

3. Does the spread appear to be roughly the same for every gene? ☐ Yes   ☐ No

4. Group the genes by the shape of their distribution?

Skewed Left	Symmetric	Skewed Right

5. Does there appear to be <u>one</u> gene that is being expressed "significantly" more than any other gene?   ☐ No   ☐ Yes (Please specify which gene) _____