**Livestock Genetics Activity**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**



1. The Smith family owns a Shorthorn bull who is homozygous red and want to breed him to a female shorthorn who is heterozygous roan. If red is considered dominant and roan is considered recessive, what is the probability that the cow will have a roan calf? What is the probability the cow will have a red calf?

ANSWER:

RED: \_\_\_\_\_\_\_\_\_\_\_\_\_%

ROAN: \_\_\_\_\_\_\_\_\_\_\_\_%

2. The Lopez’s want to breed their homozygous blue butt boar to their heterozygous black crossbreed sow. If black is dominant and blue butt is recessive, what is the percentage that the litter will be all black and what is the percentage of the litter will be spotted (blue butt coloring)

ANSWER:

BLACK: \_\_\_\_\_\_\_\_\_\_\_%

SPOTTED: \_\_\_\_\_\_\_\_\_%

3. The Brick family wants to improve their cattle’s feed efficiency. Increased feed efficiency is a dominant trait. Genetic testing indicates their bull is a heterozygous carrier. However, their female is homozygous recessive (neutral or decreased feed efficiency). What is the percentage that her calf could have an increase in feed efficiency? What is the percentage that her calf could stay neutral or decrease in feed efficiency?

ANSWER:

Increased Feed Efficiency: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_%

Neutral/Decreased Feed Efficiency: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_%