**Scenario:** Ricky Bobby and Cal Naughton, Jr. have decided to retire from racing and pursue a career in the swine industry. The two individuals began their herd by purchasing 80 purebred Yorkshire Gilts from a reputable breeder out of the Corn-Belt. Their goal is to establish a premier purebred Yorkshire operation at Talladega Genetics through selective breeding (artificial insemination). Ricky and Cal have decided to breed 40 sows to each boar. The breeding data from these replacement gilts is provided below:

Prune Candy Chip’s Medals

Average number of pigs weaned 9 11

Average pregnancy rate 90% 95%

Semen cost per dose $150 $175

1. Based on the numbers above, how many piglets should they expect to be sired by Prune Candy (5 points)?

40 \* 0.9 = 36 \* 9 = 324 piglets

1. Based on the numbers above, how many piglets should they expect to be sired by Chip’s Medals (5 points)?

40 \* 0.95 = 38 \* 11 = 418 piglets

1. What is the total semen cost for sows gilts bred to Prune Candy? Round to nearest $0.10 (5 points).

40 \* $150 = $6000

1. What is the total semen cost for sows gilts bred to Chip’s Medals? Round to nearest $0.10 (5 points).

40 \* $175 = $7000

1. What is the average semen cost per piglet for Prune Candy? Round to nearest $0.10(5 points).

$6000 / 324 = 18.52

1. What is the average semen cost per piglet for Chip’s Medals? Round to nearest $0.10 (5 points).

$7000 / 418 = $16.74

Ricky and Cal realize after their AI date that their current facilities are not large enough to house the number of piglets that will be born in the near future. They decide to build a new finishing barn to finish hogs farrowed by their new Yorkshire gilts. However, Ricky and Cal are unsure of the exact measurements needed for the barn and need help in developing a suitable facility.

1. At 7.5 sq. ft. per pig, what is the total floor space needed to house Prune Candy sired piglets? Round to the nearest sq. ft. (5 points).

324 \* 7.5 = 2430 sq. ft.

1. At 7.5 sq. ft. per pig, what is the total floor space needed to house Chip’s Medals sired piglets? Round to the nearest sq. ft. (5 points).

418 \* 7.5 = 3135 sq. ft.

1. Building construction cost is estimated at $188 per pig. What is cost to build a building large enough to house all of the finishing hogs expected to be farrowed from Ricky and Cal’s gilts (5 points)?

742 \* 188 = $139496

1. What is the cost per sq. ft. to build this finishing barn? Round to nearest $0.10 (5 points).

$139496 / 5565 = $25.1

1. Ricky and Cal are trying to figure out what their feed cost per finishing pig will be. Their current finishing diet costs $257.50 per ton. Each pig will eat a total of 675 pounds of feed. What will it cost them to finish all of the finishing hogs expected to be farrowed from their 80 gilts? Carry 2 decimal places through all of you calculation and round your final answer to the nearest dollar (5 points).

$257.5 / 2000 = $0.13 / lb. feed \* 675 = $87.75 feed cost / pig \* 742 = $65,111

Now that Ricky and Cal have constructed their farrow to finish barn, piglets are starting to arrive. Neither of them are sure what proper vaccination and management is needed to get their piglets off to a good start. Provide them with the proper instructions to process piglets below. Match the following procedures with the specified time of administration. You can use each answer more than once.

1. Needle Teeth Clipping \_\_\_\_A\_\_\_\_ A. 24-48 hrs. post-farrowing
2. Iron Injection \_\_\_\_A\_\_\_\_\_ B. 2-3 days post-farrowing
3. Tail Docking \_\_\_B\_\_\_\_\_ C. 3-7 days post-farrowing
4. Ear Notching \_\_\_B\_\_\_\_\_
5. Castration \_\_\_\_C\_\_\_\_

Lastly, Ricky and Cal have decided to keep a male intact piglet out of each boar’s first litter with a special identification to reflect on their success of racing and now raising pigs. Please indicate the correct ear notch for both boar prospects (10 points per pig):

1.  Prune Candy: 126-7

Chips Medal’s: 147-10