

Pork Evaluation

Convergent Ag Media, LLC

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By

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Printed in the U.S.A

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PORK EVALUATION

Pork can be included in meat judging competitions in a variety of classes including carcasses, fresh pork cuts, and further processed products. Regardless of the type and kind of class, evaluation of pork and subsequent placing of a class requires the ability to assess value of pork products. In commercial operations, carcass value is evaluated by using objective measurements of carcass composition. Similarly, pork classes are ranked based on the value of each exhibit as determined by the cutability and quality of lean cuts. Cutability is defined as the expected yield of the four lean cuts, including the **ham, loin, picnic shoulder** and **boston butt**. Quality is indicated by specific characteristics of the lean and fat, including **color, firmness, water holding capacity, and marbling**. The art of pork evaluation will be perfected with an understanding of value determination as well as familiarity with general anatomy and proper terminology.

RIBBING PORK CARCASSES

The loin eye, or **longissimus dorsi** muscle, is a major muscle used for posture, and runs the entire length of the vertebral column. Looking at the loin eye is an excellent predictor of the cutability and quality of the entire carcass. Carcasses are “ribbed” in standardized locations to expose the longissimus dorsi muscle for evaluation. Beef and lamb carcasses are ribbed between the 12th and 13th ribs, but pork carcasses are ribbed between the 10th and 11th ribs. This is different from beef and lamb because pigs have a variable number of ribs and must be ribbed closer to the shoulder. Once a carcass is ribbed, 10th rib back fat and loin eye area can be measured. Back fat is measured three-quarters of the distance around the loin eye from the back bone.

However, due to the location of ribbing in pork, the longissimus dorsi is cut in half and the belly may be sliced into as well. Ribbing pork carcasses potentially damages two of the most highly valued primals on a pork carcass, the loin and belly, and consequently is not widely practiced in commercial settings.



Figure 1. (left) Pork carcasses are ribbed between the 10th and 11th rib. Back fat is measured in tenths of an inch three-quarters of the way from the backbone as indicated by the red arrow. Loin area is measured in inches square using a dotted grid as seen in the picture.

Figure 2. (right) Ribbing carcasses in an evasive practice and damaging to the loin and belly primals. Thus, pork sides are not ribbed in commercial plants. However, ribbing carcasses is a common practice in research. Researchers often rib carcasses to collect quality and cutability data from the loin eye for various types of projects.



Determining Pork Value

The USDA Pork Carcass Grading Standards and lean value programs categorize pork carcasses according to relative market desirability based on carcass composition and quality. Carcass grading is not used extensively in the modern pork industry, but understanding the pork grading system will help strengthen the ability to recognize and differentiate the traits used for judging pork. Lean value programs are the most common modern industry practice used for marketing pork.

Pork Carcass Grading

Carcass yield is dependent on fat and muscle, therefore fat and muscle are the two factors used to determine the USDA quality grade. Back fat is measured at the last rib, including the skin perpendicular to the skinned surface, in tenths of an inch. Any white connective tissue located between subcutaneous fat and the vertebrae should not be included in back fat measurements. If the skin has been removed from the carcass, 0.1 inches is added to the measurement.

Muscling is evaluated by subjectively determining the relative thickness of the carcass on a scale of 1, 2, or 3. The muscles scores describe **thick or superior (3)**, **average (2)**, and **thin or inferior (1)** muscling. Carcass thickness can be influenced by the layer of subcutaneous fat that wraps around the muscles, as well as the intermuscular fat between muscles. In order to accurately assess muscle, an evaluator must take the layer of fat into account, and even mentally remove the subcutaneous fat to determine the actual muscle thickness.

Once back fat is measured and muscle thickness determined, the information is plugged into an equation to calculate the USDA Grade. There are four grades, **US No. 1**, **US No. 2**, **US No. 3**, and **US No. 4**. The USDA numerical grades only apply to carcasses with acceptable fat thickness as well as acceptable fat and lean quality. Any carcass that does not meet the minimum fat and lean quality requirements or has a thin belly is classified as US Utility.

USDA pork carcass grades are determined by the following equation:

$$\text{Carcass Grade} = (4.0 \times \text{backfat (inches)}) - \text{muscle score}$$

Example: Backfat = 0.80 inches
Muscle Score = 2
 $(4.0 \times 0.8) - 2 = 1.2$

↓
US No. 1

USDA GRADE	YIELD
US No. 1	> 60.4%
US No. 2	57.4 - 60.3%
US No. 3	54.4 - 57.3%
US No. 4	< 54.4%

Table 1. The expected yield of the four lean cuts based on chilled carcass weight are proportional to the USDA Grade. These yields will be approximately 1.0% lower if based on hot carcass weight.

Lean Value Programs

Contrary to beef and lamb, USDA grades are rarely used in the pork industry to assign value to carcasses. Large scale pork processing plants are very efficient, and assigning accurate muscle scores at line speed is difficult. Furthermore, the USDA grades do not segment the carcasses into very specific groups like beef grading does. Furthermore, unlike beef, pork carcasses are not ribbed to expose a cut surface to examine and measure the lean and fat on a cut surface of the longissimus dorsi muscle. Therefore, quality is assessed very differently in pork carcasses, and carcass value is assigned largely based on cutability alone.

The pork industry utilizes Lean Value Programs, which prices carcasses on a table or grid, based on hot carcass weight (HCW) and predicted yield. Often times, yield is expressed as percent fat free lean. Different companies each employ their own variations of grids that award premiums or discounts to carcasses from a base hundred weight price. Depending on the program, varying combinations of carcass weight and yield are more highly valued than others.

Fat Free Lean

The National Pork Producer's Council developed equations to predict the total pounds of lean muscle devoid of all fat, including marbling, a carcass would produce. Variations of the equation exist depending on how the carcass data is being collected. Commercial plants often employ more automated data collection systems including a Fat-O-Meter or ultrasound machines. These pieces of equipment measure back fat and loin eye area by probing the carcass without severely devaluing the carcasses. Light and sound waves are reflected back to the machines, and the machines are able to decipher the differences between muscle and fat to provide numerical values for back fat and loin eye area. Back fat and loin eye area measurements done visually or by hand on intact and ribbed carcasses is more commonly used in pork evaluation, research, and academic settings. Although ribbing pork carcasses is undesirable in pork plants due to the damages incurred by the belly, this provides a highly accurate visual of the loin eye and surrounding fat.

Calculating Fat Free Lean

The equations developed by the National Pork Producers Council provide a reference tool for pork producers to make fair and accurate comparisons between their product. Fat free lean equations calculate the **POUNDS** of lean muscle from a carcass with all fat removed. To convert to **PERCENT** of fat free lean, divide the pounds of lean by the HCW and multiply by 100. A closer look at the equations will simplify the factors. A base number has figures added and subtracted according to how those figures positively or negatively affect pounds of fat free lean. The more fat a carcass has, the less pounds of lean, hence the fat multiplier subtracted. Conversely, larger, heavier muscled carcasses will have more pounds of lean, and so HCW and LEA multipliers are added.

Fat Free Lean Equations

Unribbed Carcass:

$$\text{FFL} = 23.568 - (21.348 \times \text{last rib back fat, in.}) + (0.503 \times \text{HCW, lbs})$$

Ribbed Carcass:

$$\text{FFL} = 8.588 - (21.896 \times 10^{\text{th}} \text{ rib fat, in.}) + (0.465 \times \text{HCW, lbs}) + (3.005 \times 10^{\text{th}} \text{ rib loin eye area, in.}^2)$$

Example Fat Free Lean Calculations

Unribbed Carcass:

$$\begin{aligned} \text{Last rib fat} &= 0.7 \text{ in.} & \text{FFL} &= 23.568 - (21.348 \times 0.7) + (0.503 \times 224) \\ \text{HCW} &= 224 \text{ lbs.} & &= 121.30 \text{ pounds} \\ & & \% \text{ FFL} &= (121.30 / 224) \times 100 \\ & & &= 54.15\% \end{aligned}$$

Ribbed Carcass:

$$\begin{aligned} \text{10th rib fat} &= 0.85 \text{ in.} & \text{FFL} &= 8.588 - (21.896 \times 0.85) + (0.465 \times 213) + (3.005 \times 7.1) \\ \text{HCW} &= 213 \text{ lbs.} & &= 110.36 \text{ pounds} \\ \text{Loin eye area} &= 7.1 \text{ in.}^2 & \% \text{ FFL} &= (110.36 / 213) \times 100 \\ & & &= 51.81\% \end{aligned}$$

Using A Pricing Grid

Processing plants create unique pricing grids to pay producers on a carcass basis. Pricing grids most often use percent fat free lean, last rib back fat, 10th rib fat, 10th loin eye area, and hot carcass weight to assign a base price to carcasses. Adjustments can be made to the base price according to discounts and premiums awarded by the packing house. Carcasses with certain combinations of factors are higher yielding, and thus are higher valued than other combinations. Below is an example of a pricing grid that utilizes hot carcass weight and back fat, or percent fat free lean to assign a base price in dollars per hundred weight. The livestock market can fluctuate drastically, thus in order to find the most up to date market prices, consult the USDA Agriculture Marketing Service website.

	Back fat	1.00 - 1.09	0.80 - 0.99	0.65 - 0.79
HCW	<i>% FFL</i>	<i>49-50%</i>	<i>51-52%</i>	<i>53-54%</i>
212.77		50.09	52.01	53.87
212.65		50.69	52.60	54.46
214.94		50.38	52.35	54.25
214.19		51.14	53.06	54.92
213.34		51.38	53.29	55.14
213.32		51.63	53.55	55.42

Table 2. Value base pricing grids are developed by individual processors to assign base prices to carcasses. In the example on the left, hot carcass weight and either back fat or percent fat free lean are used to assign a price per hundredweight to carcasses falling into particular categories. Certain combinations of weight and percent lean are more desirable and receive a higher dollar value per hundredweight. The base price can be adjusted up or down depending on any premiums or discounts plants use to incentivize producers.

Pork Quality

Pork quality refers to the factors that influence pork processing potential and palatability of fresh and processed products. Evaluation of pork quality focuses on the appearance and physical characteristics of the **lean and fat**. Color, firmness, water holding capacity (exudativeness), texture, and marbling are all related to pork quality and the resulting processing yield, cooking loss, and consumer eating experience.

Lean Quality

Lean quality is most accurately evaluated by directly assessing a cut surface. Ribbing pork carcasses exposes a clean, flat visual of the loin eye, and the best opportunity to evaluate color, firmness, exudativeness, and marbling. A different approach is taken when evaluating intact carcasses. Well rounded evaluators should be prepared to judge carcasses under both ribbed and unribbed circumstances, as well as primal and retail pork classes with cut surfaces to examine.

Ribbed Carcasses. Pork quality is divided into two simple levels, **acceptable** and **unacceptable**. Carcasses are considered acceptable if the loin eye characteristics at the 10th rib meet or exceed the minimum requirements established by The National Pork Producer's Council (1999). The NPPC standards for color, firmness, wetness, and marbling are shown on page 12. Minimum carcass requirements include 1) slightly firm, non exudative loin eye, 2) slight amount of marbling (2), and 3) reddish pink color (3). These minimum requirements are known as **RFN**, or **red, firm, and non-exudative**. Ribbed carcasses failing to meet these requirements are deemed unacceptable and often fall into the **PSE**, or **pale soft and exudative** category.

Unribbed Carcasses. The quality of intact carcasses is determined by evaluating the firmness of the fat and lean, the color of the exposed lean, the amount of rib feathering, and thickness of the belly. The minimum requirements for unribbed carcasses are 1) a slight amount of rib feathering, 2) slightly firm fat, 3) slightly firm lean, 4) reddish pink colored lean between the ribs, and 5) the belly must be at least 0.6 inches thick at any given point.

Fat Quality

Fat quality became increasingly important as the production of bacon boomed and pigs were fed diets containing large amount of dried distiller's grains with solubles (DDGS). Pigs are monogastrics, which means they have a simple stomach. Any dietary fat pigs consume will be deposited into their tissues at the same saturation level. Dried distiller's grains are a type of unsaturated oil. When pigs eat DDGS their carcasses have soft, oily fat. This is undesirable from both a consumer and processor standpoint. Soft, oily fat is difficult to process and is subject to oxidation and rancidity at a faster rate than saturated fat. Furthermore, the yellow color of soft fat is undesirable to consumers. High quality fat is white, hard and consistent.

Lean Quality Defects

There are two major quality outliers in pork: **PSE** (pale, soft, and exudative), and **DFD** (dry, firm, and dark). The color, firmness, and water holding capacity of pork muscles are highly dependent on the final pH of meat after the postmortem conversion of muscle to meat. As glycogen stores in muscle are depleted postmortem, the muscles are unable to produce any more energy to relax. This leads to the phenomenon known as rigor mortis, and results in the animal becoming very stiff. During rigor mortis, normal body functions are impeded and lactic acid builds up in the muscle. This acid is responsible for breaking down muscle fibers, and lowering the pH of meat. An appropriate pH of 5.4-5.7 is necessary to inhibit microbial growth and tenderize the meat, but also allow the muscle structure to maintain adequate water holding capacity.

Pork with abnormally low pH (5.2-5.3) produces the condition PSE. The low pH breaks down muscle fibers to a point where the meat can no longer retain water, resulting in soft and extremely exudative lean. Furthermore, as the water exits the meat as purge, myoglobin seeps out. Myoglobin, a water soluble protein, is the main pigment responsible for meat color and thus, meat with low water holding capacity is pale.

On the other hand, pork with abnormally high pH (6.4-6.8) is DFD. Dry, firm, and dark pork is a purplish red color, very firm, and non-exudative to the point of appearing dry and sticky. Although the high pH causes muscles to retain water much better than PSE or RFN, the dark color is very undesirable to consumers. Both PSE and DFD scenarios are linked to pre-slaughter stress and genetics, and are unacceptable in terms of pork quality. If PSE or DFD are encountered in a judging class, the exhibit must be placed last.

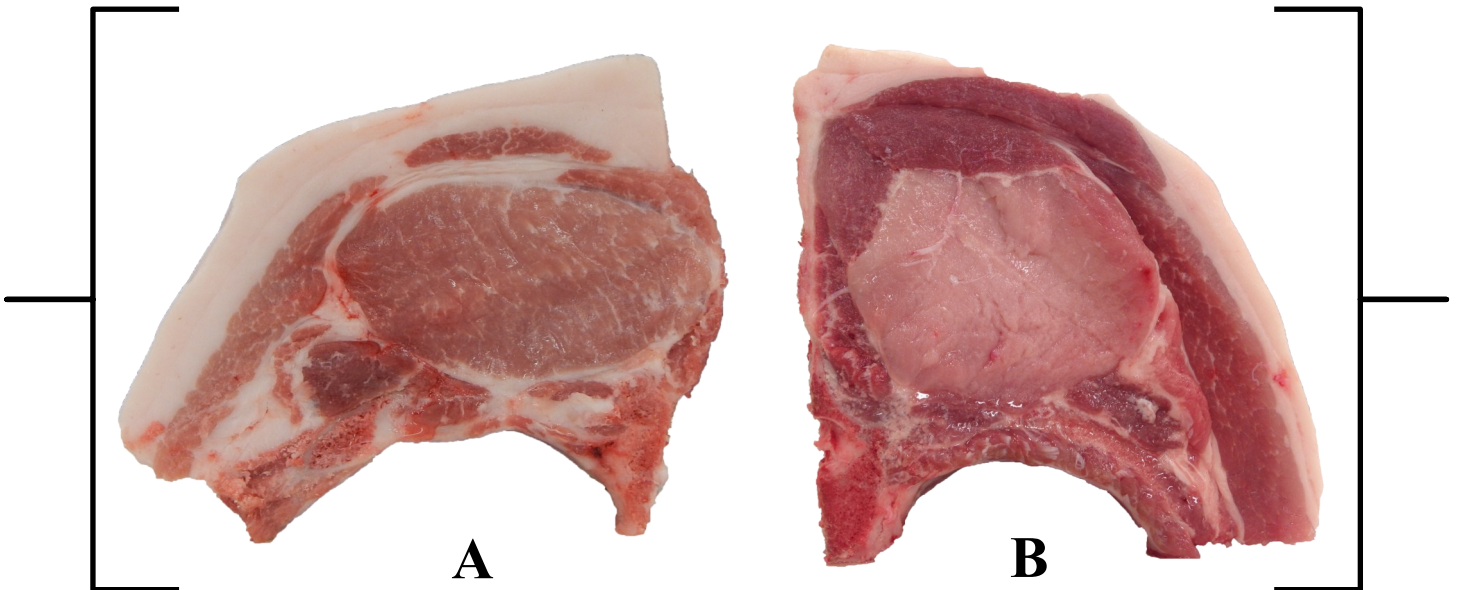


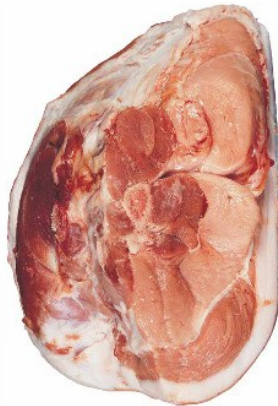
Figure 3. Pork quality can vary drastically depending on the animal's genetic background, diet, age and sex. In judging, color, firmness, exudativeness, and marbling are the traits used to describe pork quality. Loin A is very firm, uniform, reddish pink in color, non-exudative, and scores a 3 for marbling. Loin A is very high quality. Contrastingly, loin B is low quality as indicated by a soft texture, muscle separation and exudate on the cut surface. Loin B is also practically devoid of marbling. Although the color is not an ideal reddish-pink, loin B is not considered too pale and therefore, loin B is still acceptable quality and not PSE.

Figure 4. (next page) The National Pork Producers Council established pork color and marbling standards. Color is described on a 1—6 scale with optimal color described as reddish-pink (4-5). Marbling ranges from 1 to 10 and correlates to the percent of intramuscular fat found in the loin eye. Also shown in the diagram are examples of two major defects: pale, soft, and exudative (PSE) and dark, firm, and dry (DFD).

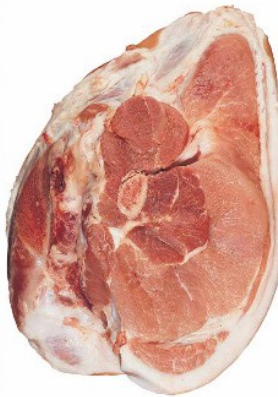
PORK QUALITY STANDARDS [®] pork

Quality of fresh pork varies greatly. The quality levels shown below will appear differently to consumers, taste differently when cooked, and perform differently when converted to processed products. High quality pork has greater monetary value than low quality pork. Quality can be evaluated by simply visual appraisal, or it can be determined more accurately by scientific tests. This chart may be used to help identify variations in pork quality. Color and Marbling Standards cards are also available.

COLOR - TEXTURE - EXUDATION



PSE Pale pinkish gray, very Soft and Exudative. Undesirable appearance and shrinks excessively.



RFN Reddish pink, Firm and Non-exudative. "IDEAL". Desirable color, firmness and water-holding capacity.



DFD Dark purplish red, very Firm and Dry. Firm and sticky surface, high water-holding capacity

COLOR STANDARDS



1.0
Pale pinkish gray to white
Minolta L* Value: 61



2.0
Grayish pink
55



3.0
Reddish pink
49



4.0
Dark reddish pink
43



5.0
Purplish red
37



6.0
Dark purplish red
31

MARBLING STANDARDS²



1.0



2.0



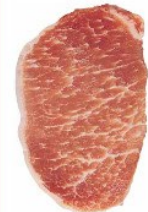
3.0



4.0



5.0



6.0



10.0

Color and marbling scores are as described in "Composition & Quality Assessment Procedures", 1999, NPPC.

1 Minolta L* values use D65 daylight light source.

2 Marbling scores correspond to intramuscular lipid content

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Pork Judging

Composition and quality are the two main considerations in judging pork. Composition is evaluated on the ratio of lean to fat, while quality is assessed on a cut surface. Learning correct terminology and location of fat and muscle regions, as well as quality characteristics, is essential to successful evaluation. Terminology for each class is divided into three categories: trimness, muscling, and quality. As the terminology becomes second nature, developing an organized system to evaluate and note classes will help develop a strong set of reasons and simplify answering questions.

Pork Carcasses

Ideal carcasses are trim, heavy muscled, and acceptable in quality. Carcasses can be presented as either intact or ribbed. The majority of carcasses are acceptable in terms of quality, therefore cutability, or the ratio of lean to fat, is the primary factor used to separate carcasses in a class. Research has shown fat cover is the most reliable predictor of lean yield on a pork carcass, and is most important when determining cutability, followed by the amount of muscle. Good evaluators are able to distinguish the difference between muscle and fat, and recognize fat from muscle shape.

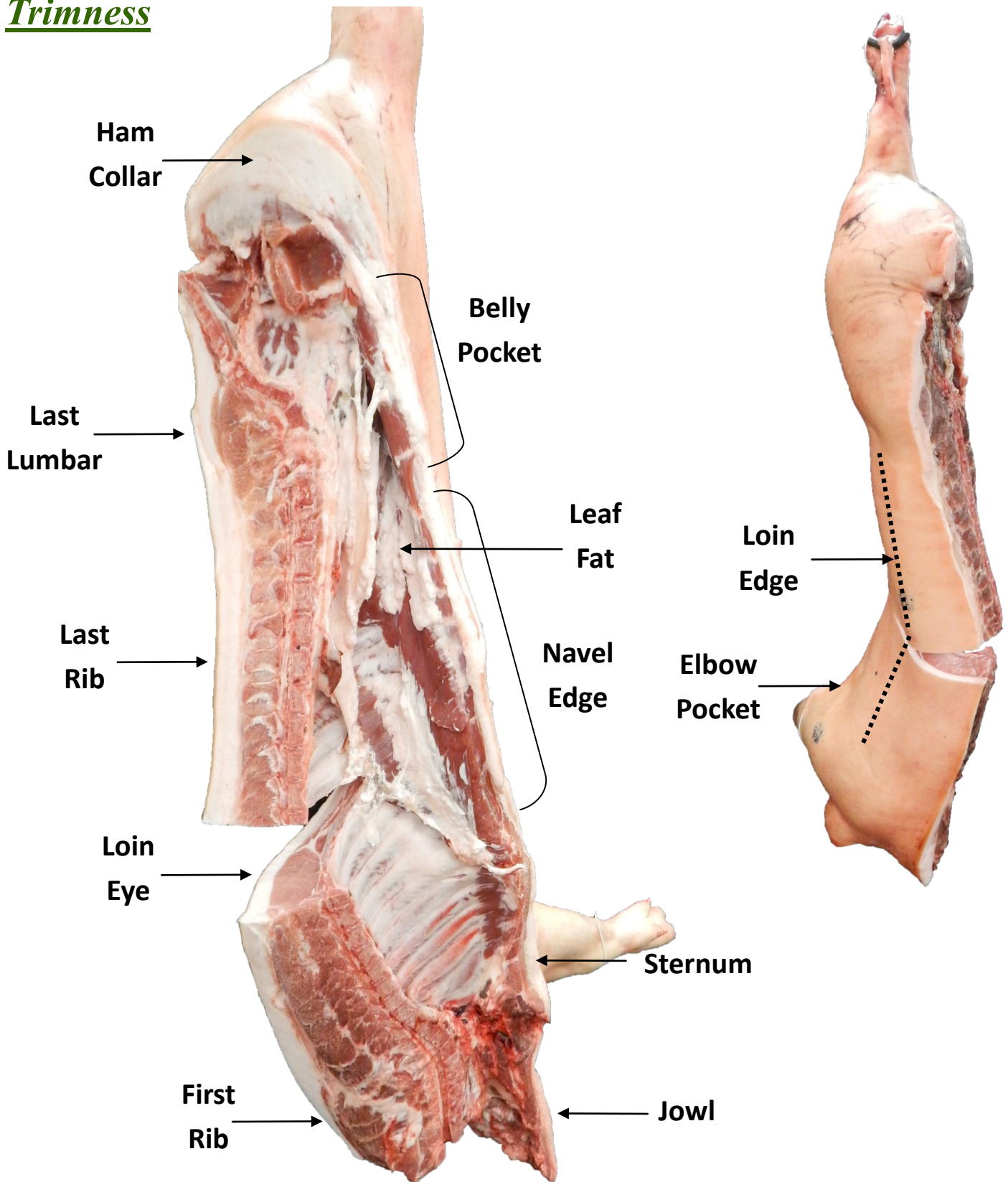
Muscle shape is round. As an animal begins to deposit fat, the corners are filled in, and this circular shape becomes more square. Often times fat animals are described as “shelfy”, because they have taken the shape of a box. Fat carcasses will appear large and heavy muscled due to the excess subcutaneous fat wrapping around the exterior of the animal. Look for the previously mentioned clues indicating the degree of fatness relative to muscling. Fat is best evaluated by standing at a three quarter view of the split side, while muscle is best evaluated by standing at a three quarter view of the skin side.

Unribbed Pork Carcasses: Unribbed carcasses are assumed to be acceptable in quality. The first step in placing unribbed pork carcasses is to evaluate trimness. Begin by methodically checking fat deposits around the carcass, beginning with back fat. When determining back fat thickness, measurements at the last lumbar, last rib, and first rib are important, but the most emphasis is placed on the last rib. Methodically compare the remaining trimness regions. Next, develop a system to assess all muscle regions. The ham is the most important muscling region, with the shoulder being a close second. Carcasses that are close on trimness should be ranked on muscling. If one carcass is more trim, and one heavier muscled, the size of each difference must be compared to place the class correctly. An initial placing should be assessed in approximately two minutes after time begins. Use the remaining time to take notes for reasons.

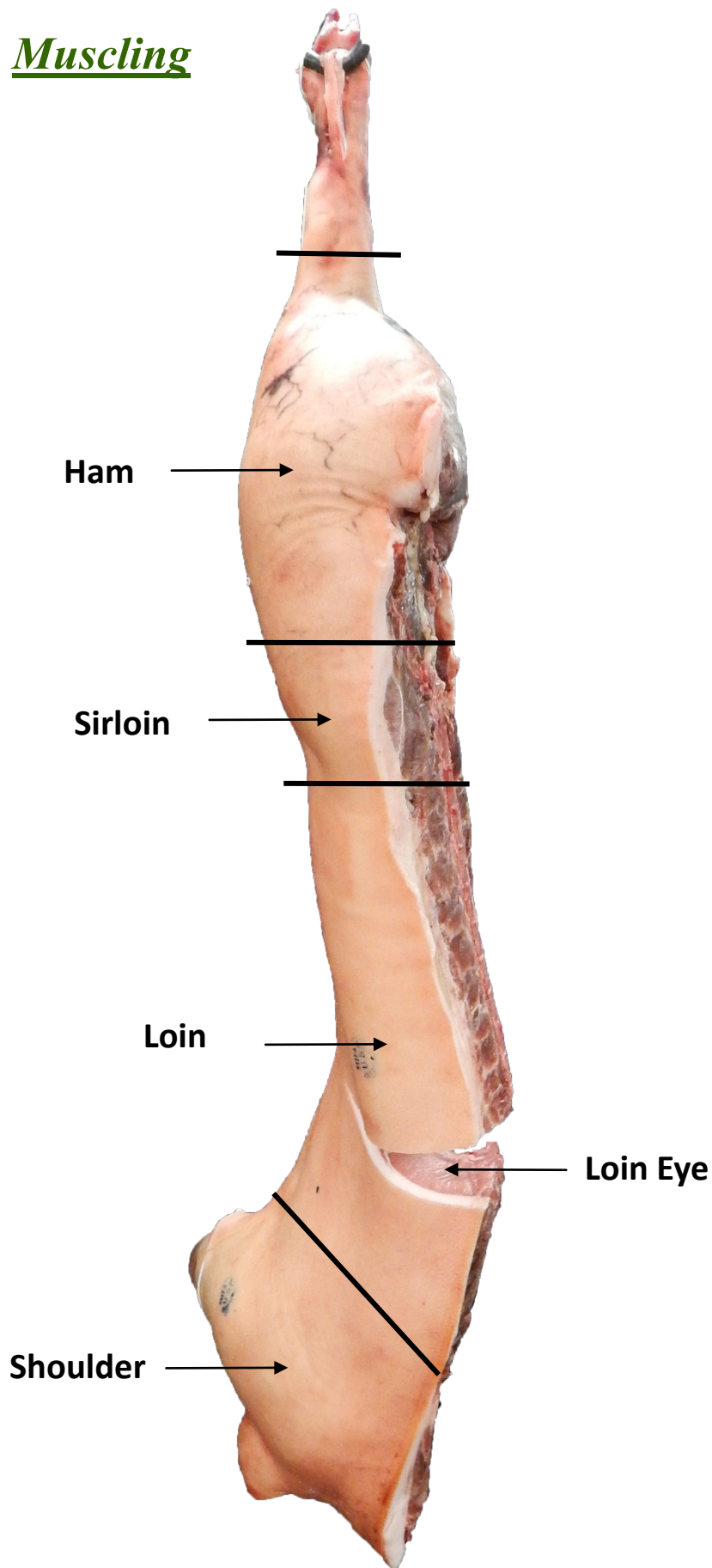
Ribbed Pork Carcasses: Ribbed carcasses are also placed on cutability, however emphasis is placed on the exposed cut surface. First look at 10th back fat and loin eye area, then move on to the remaining fat and muscle locations following the same order of unribbed carcasses. Quality becomes much more important in ribbed carcasses. Quality factors can be used to break close pairs and are essential to mention in reasons. Carcasses with unacceptable quality go last, however, *they must have all three traits, pale, soft, and exudative* to be PSE, and *dry, firm, and dark* to qualify as DFD.

Pork Carcass Terminology

Trimness



Muscling



Trimness

At the **loin eye** (ribbed carcasses only)

At the **last lumbar/over the last lumbar region**

At the **last rib/over the center loin region**

At the **first rib/over the clear plate region**

Over the **ham collar**

In the **belly pocket**

Along the **navel edge**

Over the **sternum**

Over the **loin edge**

In the **elbow pocket**

Jowl fat

Internal leaf fat

Muscling

Loin eye

Ham

Sirloin

Loin

Shoulder

Quality

Unribbed Carcasses:

Rib feathering

Belly lean color

Ribbed Carcasses, in the loin eye:

Color

Firmness

Exudativeness

Marbling

Fresh Pork Cuts

Cuts classes generally follow the same guidelines as carcass classes. A large emphasis is placed on cutability, followed by quality. Although this seems counterintuitive, the industry is largely based on trimness and muscling, and thus is the reason behind using cutability as the main deciding factor.

Hams. Hams are usually further processed and sold as a cured and/or smoked product. Ideal hams are high quality, trim, and heavy muscled. In order to place hams correctly, you must be able to evaluate trimness and muscling differences, and the size of these differences correctly. Hams should first be ranked on trimness under and along the butt face in a quick glance from the front of the class. Hams should then be ranked on muscling, which is best evaluated from the back of the class. Getting level with the table helps determine the depth of the ham. The center section and cushion are most important, and can be evaluated by standing directly behind, and looking straight down the ham. Never place hams based on the amount of exposed lean in the butt face, as this can be misleading depending on the location of the ham-loin separation. Hams are further processed and therefore quality is important, and can sometimes influence placing. An unacceptable (PSE) ham is placed at the bottom, however, the ham must be pale, soft and exudative to be PSE. Even though hams are not placed on quality, it is extremely important to pay attention and note differences for reasons.

Pork Loins. Pork loins are evaluated on the basis of cutability and quality. Center cut pork loins are later cut into rib chops, loin chops, and roasts. Since these cuts are marketed in a fresh condition, quality of pork loins takes more consideration than any other pork class. Color, firmness, marbling texture, and exudativeness need to be observed on both ends of the loin. An unacceptable (PSE) loin is placed at the bottom. Loins are also evaluated for overall cutability. Trimness and muscling should also be evaluated on both ends of the loin as well. The ultimate pork loin should be very trim, heavy muscled, and acceptable quality. A high cutability, low quality loin can very easily beat a low cutability, high quality loin. The thing to remember is comparing the size of each difference. Sort classes on trimness and break close pairs on quality.

Fresh Pork Ham Terminology

Trimness

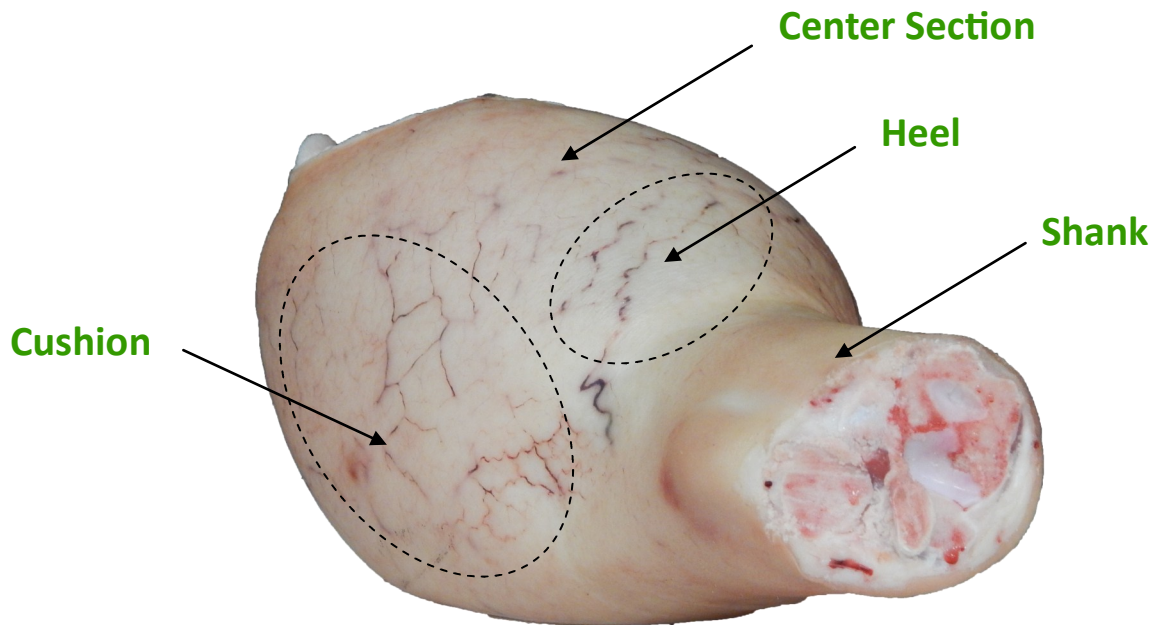
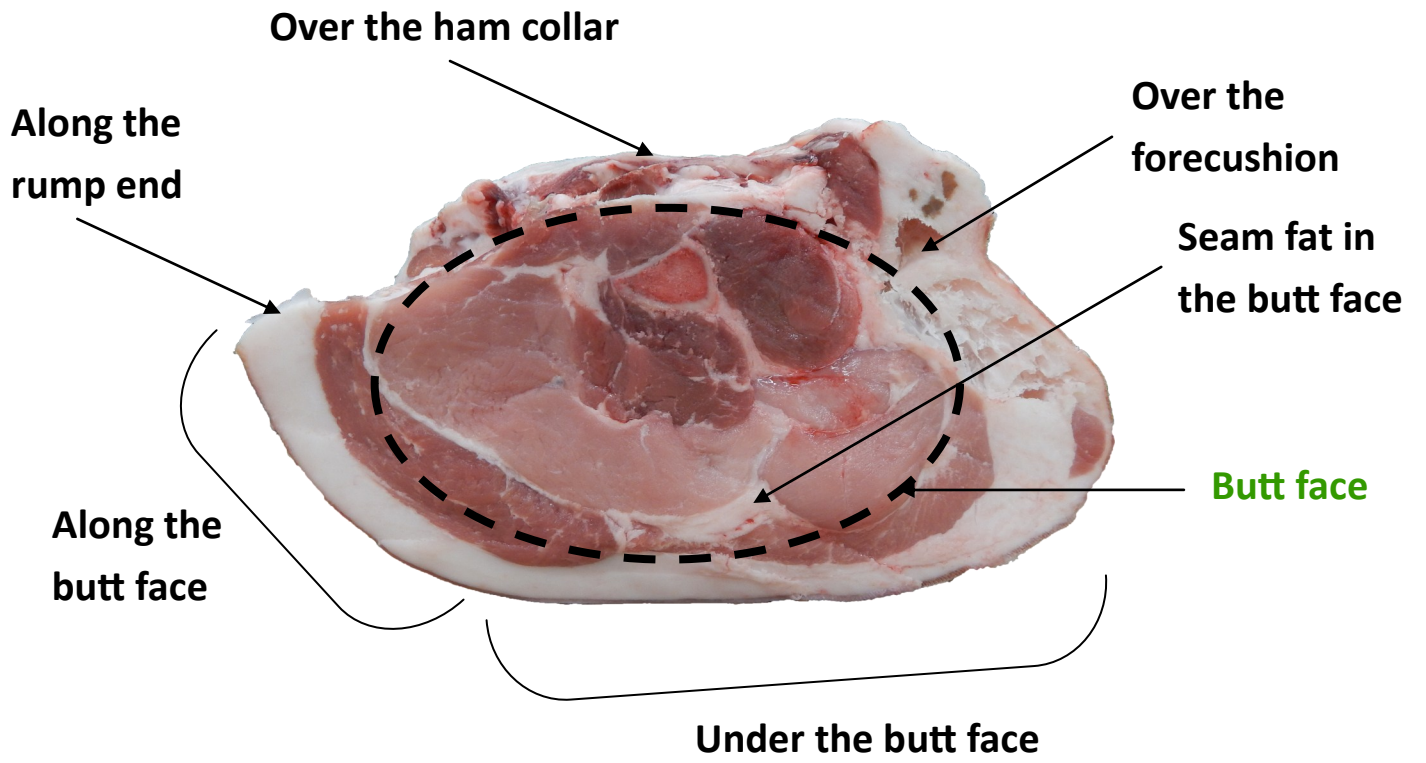
Under the **butt face**
Along the **butt face**
Along the **rump end**
Over the **ham collar**
Over the **forecushion**
Seam fat in the butt face

Muscle

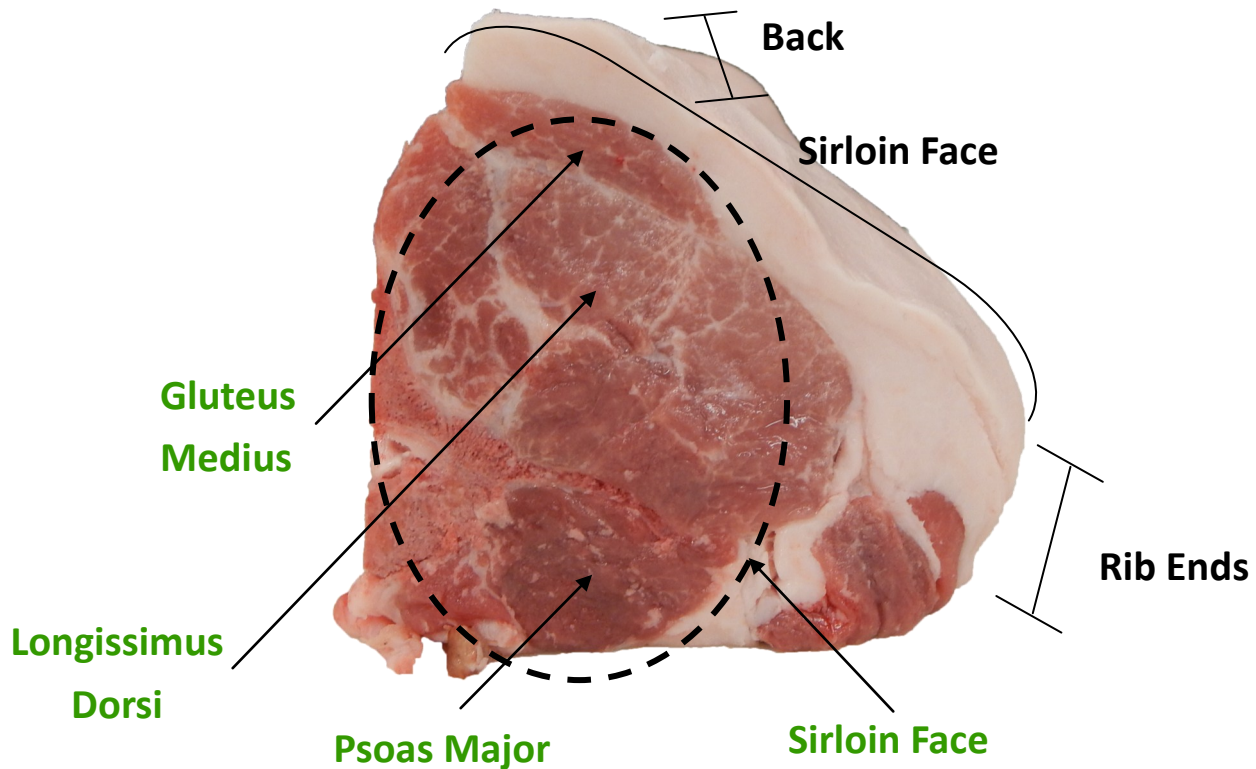
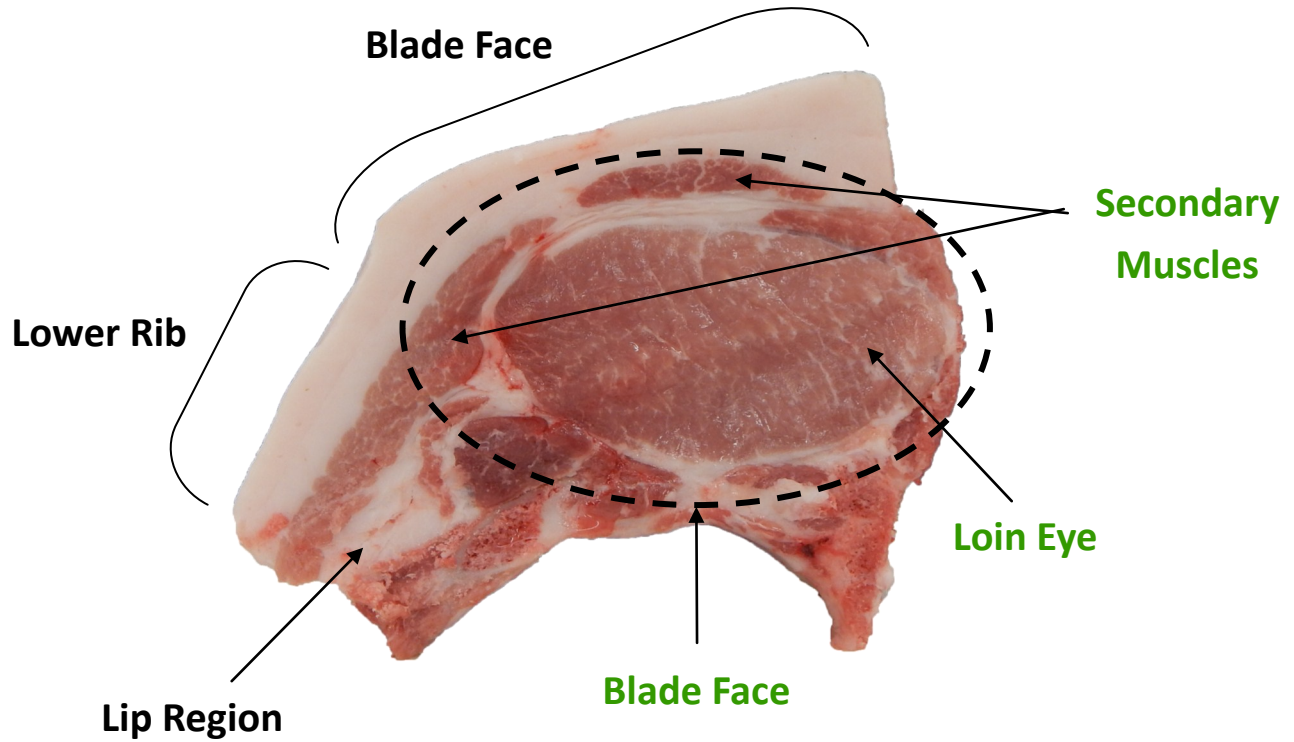
Butt face
Center Section
Cushion
Heel
Length of Shank

Quality

In the butt face
Color
Firmness
Exudativeness
Marbling



Fresh Pork Loin Terminology



Trimness

Over the **blade face**
Over the **lower rib**
In the **lip region**
Over the **back**
Over the **rib ends**
Over the **sirloin face**
Kidney fat in the sirloin face
Seam fat in the blade face/
sirloin face

Muscle

Blade face
Loin eye
Secondary Muscles
Back
Sirloin face
Longissimus dorsi
Psoas major
Gluteus medius

Quality

In the blade AND sirloin face
Color
Firmness
Exudativeness
Marbling

Reasons

Reasons are a very important part of the contest. In meat judging, there are a lot of decisions to be made, and with each decision comes a reason for why that decision was made. Whether the contest requires oral or written reasons, giving reasons is an opportunity for students to defend their reasoning for how they placed the class. Practice is essential to improve writing skills.

The format of reasons is simple and must be mastered. Essentially there are four paragraphs; the first three are comparative, the last paragraph is descriptive. In meat judging the entire class is hardly ever compared against itself. This is quite different from livestock judging reasons, in which each exhibit is compared to the entire class. Only pairs are compared in the first three paragraphs, and the last paragraph is devoted to explaining why the fourth place exhibit went last.

Comparative paragraphs have an opening statement with a topic sentence explaining why the pair placed the way it did, and why this matters. Often times a “cutout statement” is used to explain the economic value and reasoning behind a placing. The topic sentence also describes the difficulty in placing the pair. This is done by including words such as ‘easy’ or ‘close.’ Following the topic sentence are details supporting the reasoning, including trimness, muscling, or quality details. The paragraph ends with grants, or advantages the other exhibit has over the one ahead of it.

The fourth paragraph contains the same elements, but in a different order. This paragraph begins with a grant for the last place exhibit, followed by the reasoning for going last, supporting details, and ends with a cutout. The fourth paragraph is about a single exhibit and should only contain details about what the exhibit did the best or worst at.



KEYS TO SCORING WELL ON REASONS

- ◆ Organized notes lead to organized reasons. Have accurate, complete, and thorough notes.
- ◆ Reasons should be positive, logical, and concise.
- ◆ Begin each paragraph with a proper opening statement that includes the most important points involved in placing the pair.
- ◆ Use correct terminology in the correct order.
- ◆ Be comparative in the first three paragraphs (-er words) and use –est words in the fourth paragraph.
- ◆ Use proper grammar, spelling, and punctuation, and write or speak in past tense.
- ◆ Attract the attention of the reader or listener, and maintain their attention by using a variety of terms.

Taking Notes

Taking accurate and complete notes is essential to successfully organizing a set of reasons, and will help when answering questions. When evaluating a class, we are considering differences in trimness, muscling, and quality between three pairs (top, middle and bottom), with one exhibit going last. Note cards can be set up in a logical manner, with boxes for each of those pairs, as well as a space for notes on the last place exhibit.

Taking notes begins with finalizing a placing, ideally within the first two minutes after time is in. Placing classes can be done quickly and often correctly by listening to your instincts. Utilize time wisely, especially on reasons or questions classes, by placing a class and allowing plenty of time to take notes. Keeping notes clean and organized is crucial to answering questions or preparing reasons.

Ultimately, the setup of a notecard is unique to each individual, however, a space should be designated for differences in trimness, muscling, and quality (TMQ) for each pair. Merits for the pairs should be written on the left, while grants should be filled in on the right. Example notecards can be found on pages 26, 30, and 34 for pork carcass, ham, and loin practice classes.

During a contest, remember to stay focused and keep a positive mindset. Be confident in your placing and notes, and have fun!

Tips For Successful Notetaking

Notes determine the quality of reasons. Writing or presenting an acceptable sets of reasons is nearly impossible when notes are not taken while in the presence of the class. The following are some suggestions for recording notes:

- **Classes are numbered 1, 2, 3, 4, from left to right.** Before recording a single note, make certain you are positioned on the correct side of the class and you are writing down the correct placing.
- Take notes in pairs, beginning with the closest or hardest pair.
- Consider differences in trimness, muscling, and quality in each pair when evaluating carcass and wholesale cut classes.
- Record the most important point between each pair first, and denote it by circling or underlining the T, M, or Q, followed by the factors and details to support the point. Follow this by less important differences. For example, if muscling is the most important or biggest difference within a pair, muscling should be recorded first and discussed first in the reasons.
- Organize notes in a logical manner: trimness, muscling, and quality differences should be recorded in a logical sequence. Each difference, T, M, or Q should be its own sentence. Do not jump from one end of the carcass or cut to the other when describing these differences.
- The merits concerning a pair should be written on the left, while the grants are written on the right, separated by a line.
- Use abbreviations as much as possible to conserve time and space. Be sure you know what your short hand means. Circling, underlining, and starring can be used to add emphasis.
- Always mark the level of difficulty placing a pair, such as if the pair was easy or close to place.
- Check, check, and recheck numbers!
- Take notes in pencil.
- Spend all available time working notes up for written reasons, or studying your set before presenting to listener. Write your introductory sentences for each paragraph.
- Remember, there is NO substitute for good notes.

Parts of Paragraphs

First, second and third paragraphs

[Comparative]

1. Opening statement and cutout
2. Supporting details
3. Additional details
4. Grants

Fourth paragraph

[Descriptive]

1. Acknowledgement
2. Statement for placing last
3. Supporting details
4. Cutout

Pork Carcass Class





1



2



3



4





2



3



4

Pork Carcass Note Card

Class Name: Pork Carcasses

Placing: 1 — 4 — 3 — 2

Cuts: 4 — 5 — 2

<p>1/4— Heavier muscled, higher quality, yield higher percentage retail cuts with higher consumer appeal T— M— ham, sirloin, loin, shoulder Q— color and marbling in the loin eye</p>	<p>4/1— I grant T— loin eye, last lumbar, first rib, navel edge M— Q—</p>
<p>4/3— <u>EASY!</u> Much trimmer, higher percentage of roasts and chops T*— <u>loin eye, last lumbar, last rib, first rib, ham collar, navel edge, leaf fat</u> M— ham Q—</p>	<p>3/4— I admit T— M— shoulder (PDF) Q— color, firmness, marbling in the loin eye</p>
<p>3/2— <u>CLOSE</u> pair of low cutability, trimness and quality advantages T — last rib, navel edge M— shoulder Q— firmer, less exudative, greater amount of marbling</p>	<p>2/3— I concede T— clear plate, leaf M— ham (PDF) Q—</p>
<p>Last— Acknowledge acceptable quality, color and firmness Excessively fat at loin eye, last lumbar, last rib, first rib, ham collar, belly pocket, navel edge, sternum Yield a <u>low</u> percentage of trimmed retail cuts</p>	

Pork Carcass Reasons

I placed 1 over 4 due to greater muscling and quality advantages, thus yielding a higher percentage of trimmed retails with a higher consumer appeal. 1 was heavier muscled as depicted by a thicker, plumper ham, extending into a fuller sirloin and loin combined with a thicker shoulder. Moreover, 1 displayed a greater amount of marbling in a more desirable reddish-pink colored loin eye. I grant 4 displayed less fat at the loin eye, last lumbar, first rib, and over the navel edge.

4 easily placed over 3 due to much greater trimness, thus yielding a clearly higher percentage of trimmed roasts and chops. 4 was obviously trimmer as indicated by much less fat at the loin eye, last lumbar, last rib, first rib, as well as less fat over the ham collar, along the navel edge, with less leaf fat. Additionally, 4 possessed a thicker, plumper ham. I admit 3 was higher quality as shown by a greater amount of marbling in a firmer, more reddish—pink loin eye.

In a close pair of low cutability carcasses, 3 placed over 2 due to trimness and quality advantages. 3 exhibited less fat at the last rib and over the navel edge. Furthermore, 3 possessed a firmer, less exudative loin eye, with a greater amount of marbling. I concede 2 displayed less fat over the clear plate region, and less leaf fat. Lastly, 2 had a thicker, plumper ham (partially due to fat).

I acknowledge 2 displayed acceptable quality as shown by a reddish—pink, firm, non-exudative loin eye. Nonetheless, 2 was excessively fat at the loin eye, at the last lumbar, last rib, first rib, over the ham collar, in the belly pocket, along the navel edge, and over the sternum. Thus, 2 would yield a low percentage of trimmed retail cuts and placed last.

Pork Carcass Questions

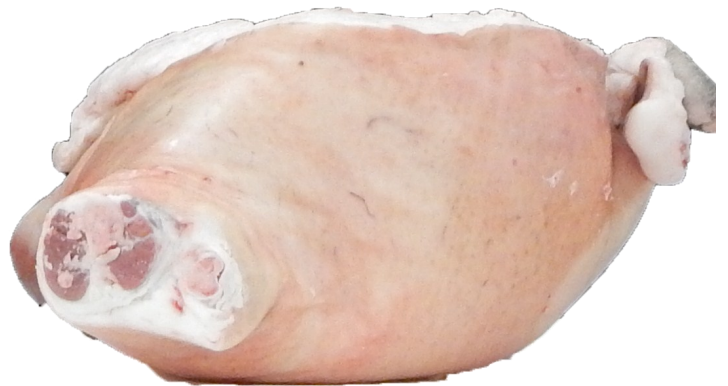
1. Which carcass was the best combination of quality and cutability?
2. Which carcass had the palest, least desirable, reddish-pink colored loin eye?
3. Which carcass displayed the thickest, plumpest, highest volumed ham?
4. Which carcass possessed the flattest, lightest muscled shoulder?
5. Which carcass revealed the greatest amount of marbling in the loin eye?
6. Which carcass had the least fat at the loin eye?
7. Which carcass exhibited the most leaf fat?
8. Which carcass was the trimmest over the last lumbar and clear plate regions?
9. Between 2 and 3, which carcass had a heavier muscled, plumper cushioned ham?
10. Between 2 and 3, which carcass was higher quality as shown by a firmer, less exudative loin eye?

3	2	4	3	4	3	2	1	4	1	Answer
10	9	8	7	6	5	4	3	2	1	Question

Pork Ham Class



1



2



3



4

1



2



3



4



Pork Ham Note Card

Class Name: Pork Hams Placing: 4—2—1—3 Cuts: 5—2—2

<p>4/1— EASY!! Much trimmer, yields a higher percentage of trimmed center cut slices T*—<u>under and along the butt face, ham collar, rump end, forecushion</u> M— greater area of exposed lean Q—</p>	<p>1/4— readily grant higher quality T— M— Q— color, firmness, exudativeness</p>
<p>2/1— CLOSE, muscle advantages T— under the butt face M— greater area of exposed lean, wider deeper center section, plumper heel Q—</p>	<p>1/2— I admit T— rump end, seam M— Q— firmer less muscle separation</p>
<p>1/3— CLOSE, trimness and muscle advantages T — slightly under the butt face, ham collar M— wider center section Q—</p>	<p>1/3— I concede T— M— plumper heel Q—</p>
<p>Last— acknowledge acceptable quality Combined trimness and muscling to the lowest Excessively fat and light muscled ham—most fat under the butt face and over the ham collar Narrowest center section Low percentage of trimmed retail cuts</p>	

Pork Ham Reasons

Without a doubt, I placed 4 over 2 due to superior trimness, thus 4 would yield a higher percentage of trimmed center cut slices. 4 was clearly trimmer as indicated by much less fat under and along the butt face, over the rump end, and ham collar, with less fat over the forecushion. Furthermore, 4 possessed a greater area of exposed lean. I readily grant 2 was higher quality as shown by a more uniform, reddish-pink color in a firmer, less exudative butt face.

In a close pair, 2 placed over 1 due to muscle advantages. 2 displayed a greater area of exposed lean in the butt face, and a wider center section. 2 also revealed less fat under the butt face. I admit 1 exhibited less fat over the rump end combined with less seam fat in the butt face. Additionally, 1 displayed a firmer butt face with less muscle separation.

1 placed over 3 in a close pair due to trimness and muscle advantages. 1 exhibited slightly less fat under the butt face, coupled with less collar fat. 1 also displayed a wider center section. I concede 3 possessed a plumper heel.

I acknowledge 3 was acceptable quality, depicted by a reddish-pink, firm, and non exudative butt face. However, 3 was excessively fat, wasty and light muscled. 3 displayed the most fat under the butt face and over the ham collar, and was excessively fat along the butt face, and over the rump and forecushion. Furthermore, 3 possessed the least area of exposed lean in the butt face and the narrowest center section. Thus, 3 would yield a low percentage of trimmed retail cuts and thus placed last.

Pork Ham Questions

1. Which ham had the palest, least uniform colored butt face?
2. Which ham was the trimmest and the highest cutability?
3. Which ham exhibited the narrowest, shallowest center section?
4. Which ham displayed the most collar fat?
5. Which ham revealed the most seam fat?
6. Between 1 and 2, which ham possessed a greater area of exposed lean, a wider, deeper center section, and plumper heel?
7. Between 1 and 2, which ham had less fat under the butt face?
8. Between 1 and 3, which ham displayed a wider section?
9. Between 1 and 3, which ham possessed a plumper heel?
10. Between 1 and 3, which was trimmer under the butt face and over the ham collar?

1	3	1	2	2	2	3	3	4	4	Answer
10	9	8	7	6	5	4	3	2	1	Question

Pork Loin Class

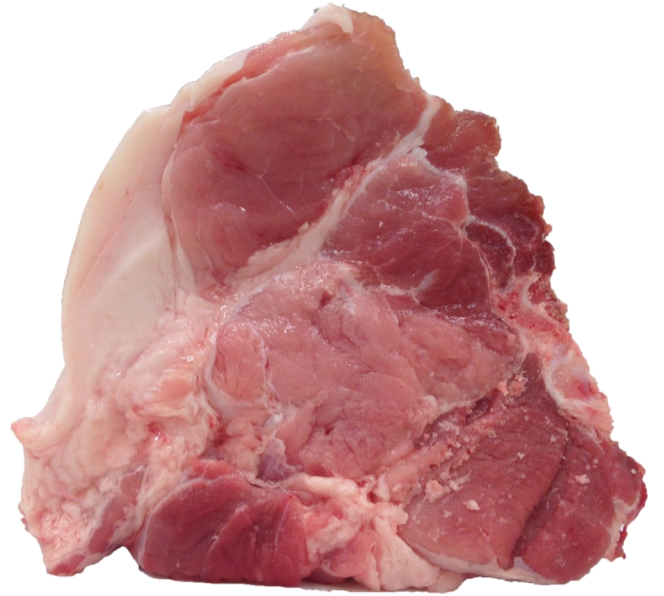
1



3



2



4



Pork Loins Note Card

Class Name: Pork Loins

Placing: 1 — 2 — 4 — 3

Cuts: 2 — 6 — 4

<p>1/2— Close pair, muscle advantages, no cutout</p> <p>T—kidney fat</p> <p>M— loin eye area, back, area of lean in the sirloin face</p> <p>Q— uniform color in the sirloin face</p>	<p>2/1— I admit</p> <p>T— upper sirloin face</p> <p>M— gluteus medius</p> <p>Q—</p>
<p>2/4— EASY! Clearly trimmer, higher percentage of trimmed retail cuts</p> <p>T*— <u>blade face, lip region, back, sirloin face, kidney fat, seam fat in both faces</u></p> <p>M— loin eye area, area exposed lean in sirloin face with larger <u>Longissimus dorsi</u></p> <p>Q—</p>	<p>4/2— Readily grant higher quality</p> <p>T—</p> <p>M—</p> <p>Q*— <u>more reddish pink color, firmer, greater amount of marbling in the both faces</u></p>
<p>4/3— pair of low cutability loins, heavier muscled, trimmer, higher muscle to bone ratio</p> <p>T — <u>blade face</u>, lip region, upper sirloin face, seam fat in blade face</p> <p>M— loin eye area, greater area of exposed lean, especially larger gluteus medius</p> <p>Q—</p>	<p>3/4— I recognize</p> <p>T—</p> <p>M— longissimus dorsi</p> <p>Q— greater amount of marbling in blade and sirloin face</p>
<p>Last— Acknowledge high quality loin, acceptable reddish pink color, firm, non-exudative, greatest amount of marbling in blade and sirloin face</p> <p>However, 3 is fattest, wastiest, lowest yielding</p> <p>Most fat over the blade face, in the lip region</p> <p>Smallest loin eye and gluteus medius</p> <p>Lowest percentage of trimmed retail cuts</p>	

Pork Loin Reasons

I placed 1 over 2 in a close pair due to muscling advantages. 1 was heavier muscled as indicated by a larger loin eye, a fuller, deeper back, and a greater area of exposed lean in the sirloin face. 1 also exhibited less kidney fat in the sirloin face. Additionally, 1 revealed a more uniform color in the sirloin face. I admit 2 displayed less fat over the upper sirloin face. 2 also had a larger gluteus medius in the sirloin face.

Without hesitation, 2 placed over 4 due to clearly greater trimness thus yielding a much higher percentages of trimmed retail cuts. 2 was obviously trimmer as depicted by much less fat over the blade face, in the lip region, and over the sirloin face, combined with less kidney fat and seam fat in the sirloin face. Moreover, 2 had a larger loin eye and a greater area of exposed lean in the sirloin face, with an especially larger longissimus dorsi. I readily grant 4 was much higher quality as evidenced by a more desirable reddish-pink color, firmer cut surface, and greater amount of marbling in both the blade and sirloin face.

In a pair of low cutability loins, 4 placed over 3 due to greater muscling and trimness, thus 4 would yield a higher muscle to bone ratio. 4 was heavier muscled as shown by a larger loin eye area as well as a greater area of exposed lean in the sirloin face, with an especially larger gluteus medius. Furthermore, 4 displayed less fat over the blade face, in the lip region, and over the upper sirloin face combined with less seam fat in the blade face. I recognize 3 revealed a greater amount of marbling in the blade and sirloin face. Lastly, 3 exhibited a larger longissimus dorsi in the sirloin face.

I acknowledge 3 was high quality as indicated by a reddish-pink color, firm, non-exudative cut surface in both the blade and sirloin face, coupled with the greatest amount of marbling in both faces. However, 3 was the fattest, wastiest, lowest yielding loin. 3 displayed the most fat over the blade face and in the lip region, with excessive fat over the back and sirloin face. Moreover, 3 possessed the smallest loin eye area and gluteus medius in the sirloin face. Therefore, 3 would yield the absolute lowest percentage of trimmed retail cuts, and thus placed last.

Pork Loin Questions

1. Which loin has the smallest gluteus medius in the sirloin face?
2. How many pork loins displayed acceptable quality?
3. Which loin has the smallest loin eye area?
4. Which loin displayed the least kidney fat in the sirloin face?
5. Between 1 and 4, which loin displayed more reddish—pink, and firmer cut surfaces with a greater amount of marbling in both faces?
6. Between 2 and 3, which loin was higher cutability?
7. Between 1 and 2, which loin revealed a more uniform color in the sirloin face?
8. Which loin possessed the greatest area of exposed lean in the blade and sirloin face and the deepest, fullest back?
9. Which loin exhibited the smallest longissimus dorsi in the sirloin face?
10. Which loin possessed the softest fat, especially in the sirloin face?

2	1	1	1	2	4	1	3	4	3	Answer
10	9	8	7	6	5	4	3	2	1	Question

