Percent Muscle Estimations for Youth Judging Contests

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Step1: Live Weight
Based on the live weight of the hog, select the corresponding starting % muscle. For example: For a 290 lb. the starting % muscle would be **50.1**.

Live Weight (lbs.)	% Muscle
330	48.9
320	49.2
310	49.5
300	49.8
290	50.1
280	50.4
270	50.7
260	51.0
250	51.3
240	51.6
230	51.9

Step 2: 10th Rib Backfat
Add or Subtract the 10th rib backfat factor. For example: If you estimate the 10th rib backfat to be .9 then you subtract 1.2 from the starting % muscle. **50.1 - 1.2 = 48.9**

10th Rib Backfat (inches)	Factor
.5	+ 3.6
.6	+ 2.4
.7	+ 1.2
.8	0.0
.9	- 1.2
1.0	- 2.4
1.1	- 3.6
1.2	- 4.8
1.3	- 6.0
1.4	- 7.2
1.5	- 8.4

Step 3: Loin Muscle Area
Add or Subtract the Loin Muscle Area factor. For example: If you estimate the Loin Muscle Area to be 6.5, then you add 1.0 to the % muscle. **48.9 + 1.0 = 49.9**

Loin Muscle Area (square inches)	Factor
5.0	- 2.0
5.5	- 1.0
6.0	0.0
6.5	+ 1.0
7.0	+ 2.0
7.5	+ 3.0
8.0	+ 4.0
8.5	+ 5.0
9.0	+ 6.0
9.5	+ 7.0
10.0	+ 8.0

The final % muscle calculation is 49.9 % muscle.

Reporting Answers on the Scantron Sheet

The answers for % muscle will go on the back side of the scantron sheet in the written exam section. Animal 1 will be question 1, Animal 2 will be question 2 and so on. We usually grade 5 swine animals.

Each of the multiple choice letters is a range of percent muscle that you think the animal falls into.

    a. **47.9% muscle or less**
    b. **48.0 – 50.9 % muscle**
    c. **51.0 – 53.9 % muscle**
    d. **54.0 – 56.9 % muscle**
    e. **57.0 % muscle or greater**

Fill in the letter that accepts the range that you calculated.

For example from the previous example the calculated percent muscle was 49.9%. **Letter B would be filled in as the correct answer as it falls in the 48.0 – 50.9%.**

One more example:
250 lb. barrow that has .8 inch 10th backfat and 7.5 square inches of loin muscle area.

51.3 starting %
muscle No adjustment
for backfat
+ 3.0 for loin muscle area

= **54.3 % muscle**

Letter D would be filled in as the correct answer as it falls in the 54.0 – 56.9% range.