

SAMPLE

**Indiana FFA Meat Evaluation and Identification Contest**  
**Meat Formulation Problem**  
**January 26, 2008**

Listed below are specifications for ground beef. Use this information to answer the ten multiple choice questions and the solution problem on the following page.

Choose the best response to each of the questions. There will only be one best answer.

(50 points)

Specifications for ground beef:

Fat content of finished product = 20 %

Total pounds of product desired = 1,000

Manufacturing date = January 26, 2008

Use no product over 5 days old

Use no product over 36°F

Use no variety meats

<b>Ingredient</b>	<b>Temp (°F)</b>	<b>Processing date</b>	<b>% Fat</b>	<b>Cost/lb</b>
50/50 Beef Trimmings	40	Jan. 19	50	\$0.55
60/40 Beef Trimmings	33	Jan. 24	40	\$0.70
95/5 Beef Trimmings	38	Jan. 24	5	\$1.50
Beef Chuck	30 (frozen)	Jan. 24	15	\$1.90
Beef Loin	33	Jan. 24	10	\$3.10
Bull Meat	33	Jan. 19	10	\$0.80
Beef Round	33	Jan. 24	10	\$2.00
Beef Heart	35	Jan. 24	10	\$0.40

## Meat Formulation Answer Sheet

Contestant Name: \_\_\_\_\_

Contestant #: \_\_\_\_\_

Answer the following multiple choice questions (4 pts each):

- \_\_\_\_\_ 1. How many pounds of beef chuck are used in the final product (least cost formulation)?  
a. 0                      b. 200                      c. 500                      d. 800
- \_\_\_\_\_ 2. Which ingredient is not used because it is too expensive?  
a. 50/50 beef trimmings                      c. Beef loin  
b. Bull meat                      d. Beef heart
- \_\_\_\_\_ 3. How many ingredients could not be used because they are too old?  
a. 0                      b. 1                      c. 2                      d. 3
- \_\_\_\_\_ 4. How many pounds of 60/40 beef trimmings are used in the final product?  
a. 200                      b. 333                      c. 667                      d. 800
- \_\_\_\_\_ 5. How many pounds of lean are provided by the 60/40 beef trimmings in the final product?  
a. 133                      b. 200                      c. 333                      d. 667
- \_\_\_\_\_ 6. Beef heart was not used because it was...  
a. a variety meat                      c. Too expensive  
b. Too old                      d. None of the above
- \_\_\_\_\_ 7. How many pounds of lean are in the final product?  
a. 200                      b. 400                      c. 600                      d. 800
- \_\_\_\_\_ 8. What is the price of the lean ingredient used in this formulation?  
a. \$0.40/lb                      b. \$0.80/lb                      c. \$1.90/lb                      d. \$2.00/lb
- \_\_\_\_\_ 9. How many pounds of frozen product are used in the formulation?  
a. 0                      b. 333                      c. 667                      d. 800
- \_\_\_\_\_ 10. How many ingredients are not at the proper temperature?  
a. 0                      b. 1                      c. 2                      d. 3

Number correct: _____ x 4 = _____
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Which of the available product combinations (must meet specifications) would provide the least cost formulation for the desired batch size? Circle the correct solution. (10 pts)

- a. 50/50 beef trimmings and beef chuck @ \$1.71/lb
- b. 50/50 beef trimmings and beef round @ \$1.63/lb
- c. 60/40 beef trimmings and beef chuck @ \$0.94/ lb
- d. 60/40 beef trimmings and beef chuck @ \$1.66/ lb
- e. 60/40 beef trimmings and beef round @ \$1.13/lb
- f. 60/40 beef trimmings and beef round @ \$1.57/lb

Total pts: _____
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