Team Name: _____

EXAMPLE **Team Problem** **25 points**

You are a stocker operator who is evaluating which ear implant to use in a load of calves you are planning to purchase. You have used Ralgro in the past but recently read an article about a university study where cattle implanted with Revalor-G had greater performance than those with Ralgro. Here is the data from the article:

Body weight and average daily gain of stocker cattle implanted with Ralgro, Revalor-G, or not implanted over a 130-day period

	Implant Treatment		
Item	Not Implanted	Ralgro	Revalor-G
Final weight, lbs.	709	727	746
Total ADG, lbs.	1.25	1.40	1.54

Adapted from: J.T. Johns, K.D. Bullock, D. Nash, and T. Slaughter. 2000. The Effect of Revalor-G, Synovex-S, or Ralgro on Gain of Grazing Steers. Beef Report. University of Kentucky, Lexington, KY.

Use the above information and the provided product labels to answer each of the following questions.

1. What are the active ingredients and their concentration in each implant? 1 point each.
   a. Ralgro
      36 mg zeranol

   b. Revalor-G
      40 mg of trenbolone acetate and 8 mg estradiol

2. In addition to raising stocker cattle, you also have a commercial cow herd that develops its own replacement heifers. You are concerned that you replacement heifers are not gaining enough weight heading into the breeding season. Could you implant these heifers with either product to get them to gain more weight the last 3 months before breeding? 1 point.
   No, neither of these implants are approved for use in heifers intended for reproduction after weaning.
3. You purchase a load of 57 steer calves with an average weight of 512 lbs. at $145.20 per cwt.
   a. What is the average purchase price per calf? Round you answer to the nearest cent. 1 point.
      $Steer\ purchase\ price = \frac{512}{100} \times \$145.20 = \$743.42$
      Must have exact answer for credit.

   b. What is the purchase price for the entire lot of cattle? Round you answer to the nearest cent. 1 point.
      $Lot\ purchase\ price = 57 \times \$743.20 = \$42{,}374.94$
      Must be within $1 for credit.

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4. You plan to graze the cattle for 120 days on tall fescue pastures. If your cattle perform the same ADG as the study you read about (in the above table), what would be the final body weight of your steers if they are non-implanted or are implanted with either Ralgro or Revalor-G? Round your answers to the nearest tenth of a pound. 2 points each.
    a. Non-implanted
    $Final\ body\ weight = (1.25\ ADG\ \times 120\ days) + 512\ lbs. = \ 662\ lbs.$
    Must have exact answer for credit.
    b. Ralgro
    $Final\ body\ weight = (1.40\ ADG\ \times 120\ days) + 512\ lbs. = \ 680\ lbs.$
    Must have exact answer for credit.
    c. Revalor-G
    $Final\ body\ weight = (1.54\ ADG\ \times 120\ days) + 512\ lbs. = \ 696.8\ lbs.$
    Must have exact answer for credit.
5. You anticipate that the sale price for 6 weight feeder calves at the time you will market the stocker steers will be $139.00 per cwt. What would be the sale price for your steers if they are non-implanted or are implanted with either Ralgro or Revalor-G? Round your answers to the nearest cent. 2 points each.
    a. Non-implanted
    $Steer\ sale\ price = \frac{662}{100} \times \$139.00 = \$920.18$
    Must have exact answer for credit.
    b. Ralgro
    $Steer\ sale\ price = \frac{680}{100} \times \$139.00 = \$945.20$
    Must have exact answer for credit.
    c. Revalor-G
    $Steer\ sale\ price = \frac{696.8}{100} \times \$139.00 = \$968.55$
    Must have exact answer for credit.
6. Revalor-G costs $139.99 per 100 doses and Ralgro costs $37.99 per 24 doses. What is the cost per implant? Round your answer to the nearest cent. 1 point each.
    a. Ralgro
    $Cost\ of\ Revalor - G\ implant = \$37.99/24 = \$1.58$
    Must have exact answer for credit.
    b. Revalor-G
    $Cost\ of\ Ralgro\ implant = \$139.99/100 = \$1.40$
    Must have exact answer for credit.
7. You decide the best wat to best way to evaluate which implant is to calculate the return on investment for each implant relative to non-implanted cattle. Calculate the value of additional calf sale value per dollar spent on implants for each product. Round your answer to the nearest cent. 3 points each.
    a. Ralgro
    $Additional\ value\ relative\ to\ non - implanted = \ \$945.20 - \$920.18 = \ \$25.02$
    $Return\ on\ investment = \$25.02/\$1.58 = \$15.84$
    b. Revalor-G
    $Additional\ value\ relative\ to\ non - implanted = \ \$968.55 - \$920.18 = \ \$48.37$
    $Return\ on\ investment = \$48.37/\$1.40 = \$34.55$
8. Which implant is also approved for use in suckling beef calves and finishing cattle? 1 point.
    Ralgro