

Team Name: _____

Team Number: _____

2016 Block and Bridle Contest – Senior Team Problem

You are a commercial cow/calf producer whose calf crop this year consisted of 55 steer calves and 60 heifer calves. You are in the process of selling weaned calves and selecting female replacements.

1. You retain the top 20% of heifer calves as female replacement heifers. How many females will you keep this year?
 $60 \text{ heifers} \times 0.2 = 12 \text{ replacements}$
2. Steer calves and the rest of your heifer calves are marketed through your local auction yard. Your steer calves sold for \$165/cwt with an average weight of 575 pounds. Your heifer calves sold for \$146/cwt with an average weight of 525 pounds. How much total income did you have from the sale of these calves? (round to nearest penny)
 $165/\text{cwt} \times 5.75 = \$948.75/\text{head} \times 55 \text{ head} = \$52,181.25$
 $146/\text{cwt} \times 5.25 = \$766.50/\text{head} \times 48 \text{ head} = \$36,792.00$
 $\$52,181.25 + \$36,792.00 = \$88,973.25 \text{ from sale of calves}$
3. You deworm your replacement heifers with Dectomax Pour-on. The recommended dosage for this dewormer is 1mL/22lb body weight. If your replacement heifers average 550 pounds, how much total dewormer will you need for all of your replacements? (whole number)
 $550 \text{ lb heifer} \times (1\text{ml}/22 \text{ lb body weight}) = 25 \text{ mL}/\text{head} \times 12 \text{ head} = 300 \text{ ml dewormer}$
4. Your heifers are expected to reach a mature weight of 1,300 pounds. If you want to breed them at 65% of their mature size, what is the target breeding weight of these heifers? (whole number)
 $1,300 \text{ lbs} \times 0.65 = 845 \text{ lbs}$
5. These heifers are currently 8 months old. If you want to breed at 13.5 months, what average daily gain is required for the heifers to reach their target breeding weight? (assume a month is 30 days)
 $13.5 \text{ mo} - 8 \text{ mo} = 5.5 \text{ mo} \times 30\text{d} = 165 \text{ days to breeding}$
 $845 \text{ lb target} - 550 \text{ lb wt} = 295 \text{ lbs needed}$
 $295 \text{ lbs} / 165 \text{ days} = 1.79 \text{ lb ADG}$
6. You will synchronize estrus using MGA at a rate of 0.5 mg per head daily. You buy MGA premix that contains 200 mg MGA per 50 pound bag. How much of this premix will you feed to each heifer daily? (round to nearest hundredth)
 $0.5 \text{ mg per head} \times 50\text{lb}/200\text{mg} = 0.125 \text{ lb} \rightarrow 0.13 \text{ lb}$
7. You are feeding each heifer 4.5 pounds of total concentrate daily. How much corn do you need add to the premix above to feed each heifer daily? (round to nearest hundredth)
 $4.5 \text{ lbs feed} - 0.13 \text{ lbs premix} = 4.37 \text{ lb corn}$
8. You will breed these heifers artificially. If you expect a 65% pregnancy rate from each AI breeding, how many heifers will be open after 2 AI breedings?
 $12 \times 0.65 = 7 \text{ heifers bred} = 5 \text{ heifers open} \times 0.65 = 3 \text{ heifers bred} \rightarrow 2 \text{ heifers still open}$
9. During the pregnancy of these heifers you will feed a ration of corn silage and corn gluten feed. If corn silage is 35% dry matter and you want to feed 16 pounds of dry matter, how much silage will each pregnant heifer receive daily? (whole number)
 $16 \text{ lbs dry matter} / 0.35\% \text{ dry matter} = 46 \text{ pounds corn silage}$
10. The corn silage ration provides 1.28 lbs of protein to the heifers. How much corn gluten (at 22% protein) must be fed in the ration in order to provide the heifers with 2.3 pounds of protein daily?
 $2.3 \text{ lbs total} - 1.28 \text{ lbs from silage} = 1.02 \text{ pounds of protein needed}$
 $1.02 \text{ pounds needed} / 0.22 \text{ percent protein} = 4.6 \text{ pounds of corn gluten}$