

## Final Week Assignment- Due May 22

**Announcements:** For all underclassmen- This is your final assignment! Seniors, you are exempt from this assignment. If you have not completed all of the Ag. Ed. Net assignments (crosswords and worksheets), you need to sign on and complete them and submit them for evaluation to Mr. Starkey. If there is not a grade in Progressbook, then you need to make communication with Mr. Starkey ([mstarkey@western-reserve.org](mailto:mstarkey@western-reserve.org)) to find out why. After May 22, missed assignments become zeroes until completed. On May 29, your 4<sup>th</sup> quarter grade will be calculated accordingly. May 26-29<sup>th</sup> will be dedicated strictly to MAKE UP work. No new assignments will be given for that week. If a student needs more time to complete assignments after May 29, their 4<sup>th</sup> quarter grade will become an I for Incomplete. It will be the student's responsibility to complete missing assignments after this point.

Week 7/8 Assignment was to get your AET Recordbooks up to date. You must have at least 20 entries since March 14, 2020 to get full credit for this assignment. This assignment will count as up to 10% of your 4<sup>th</sup> quarter grade, as stated in the grading policies.

**Final Assignment-** Mr. Starkey will be emailing the final assignment to each student on their Western Reserve email account. I will include this document as an attachment. Students may complete the assignment by creating their own document (print or copy and save), complete the questions, and email back to Mr. Starkey (document or pictures of completed pages.)

If you are planning to exhibit a project or livestock at the fair through FFA, you need to send Mr. Starkey an email stating what you would like to exhibit. Paperwork will be completed as soon as we are able to. Paperwork cannot even be distributed yet, so we will wait until further notice from the extension office at this point.

Directions for Final Assignment: Complete the following Agricultural Calculations as a **family**. Sit down with your parents and siblings, or anybody else that lives in your household. I encourage you to phone a friend if needed, or consult resources to help guide you. There are several different types of questions and calculations that we may encounter during a career in Agriculture. The following questions are a small sampling of what we may see personally or professionally. Use any resource you see fit to help you complete the following questions, but remember to keep your social distance to 6 feet or more. REMEMBER TO SHOW YOUR WORK!!!! I WILL GIVE PARTIAL CREDIT TO SHOW WORK EVEN IF THE FINAL ANSWER IS INCORRECT. Good luck!!

### Agricultural/Farm Math

1. The grain on the trucks is weighed at the grain elevator before it is dumped into the bin. Shannon's ticket says her truck weighed 31,911 pounds full. After it was emptied, the truck weighed 10,629 pounds. How many pounds of wheat were on the truck? Wheat is sold by the bushel. A bushel is sixty pounds. How many bushels of wheat were on the truck?

2. Mike and Shannon harvested 117,544 pounds of winter wheat off the Stone Ranch. There are sixty pounds of wheat in one bushel. They planted 24.4 acres of winter wheat. How many bushels per acre did the crop yield?

3. Mike is going to take eighteen calves to the livestock sale yard. If the average weight is six hundred seventy-two pounds each, and the average price the calves are selling at the auction is 92 cents per pound, about how much money will Mike bring home from the calves he sells?

4. Mike and Shannon sold 128,075 pounds of winter wheat. The price they sold it for was \$3.81 per bushel. If there are sixty pounds per bushel, how much money did they get for their winter wheat crop?

5. The total cattle herd is spread out amongst several different pastures-as follows:

At Mamie's pasture: 16 cows 13 heifers 7 calves

At McLoed's pasture: 18 cows 11 calves 1 bull

At Mary Lou's pasture: 16 cows 5 calves 1 bull

At Nadine's pasture: 12 calves

Cows make up what percentage of all the animals in the four pastures?

Heifers make up what percentage of all the animals in the four pastures?

Calves make up what percentage of all the animals in the four pastures?

Bulls make up what percentage of all the animals in the four pastures?

Round your answers to the nearest percent.

6. A long acting pour on pesticide is applied in May, before we turn the cattle out into the pasture. This will help to prevent problems from flies and lice. The directions say to apply one-fourth of a fluid ounce per one hundred pounds of body weight. The cows average about 1,000 pounds each, the heifers are about 800 pounds each and the bulls are about 1,600 pounds each. If there are 42 cows, eight heifers, and four bulls, how many fluid ounces of pour on pesticide will be needed?

7. You are a farmer and you have just harvested a 120-acre field. Your GPS system says that your corn is yielding 168 bushels per acre. How many bushels of corn will you have for the 120-acre field?

8. Truck drivers come to the farm to haul your corn to a nearby town that has an ethanol plant. The first truck that comes in is  $\frac{1}{2}$  full with corn. The second truck that comes in is  $\frac{1}{3}$  full with corn. If a trailer will hold 1000 bushel, how much corn is in the two trucks? Were two trucks needed to carry the corn?

9. The processors at the ethanol plant receive your corn and combine it with the shipment of corn that has arrived by rail car. The corn is made into ethanol. The ethanol is then piped into three tanker trucks and they each drive 56 miles (one way) to a gasoline distributor. How many total miles are driven if you combine the mileage of all three trucks as they complete the round trip (there and back)?

10. Meanwhile a marketer at the local corn growers association is budgeting for some radio ads to promote ethanol to consumers. The marketer will have to pay \$650 to the radio station manager for each radio ad. The marketer decides to purchase two ads. What is the total cost of the ads placed?

11. A consumer hears one of the radio ads and drives to the gas station to fill up her car with ethanol. She purchased 12 gallons of fuel mixed with ethanol. Her car can drive 31 miles for each gallon of gas. How far can she go on the fuel that she purchased?

12. You have a combine and are harvesting corn. The combine is equipped with a 12 row corn head. The corn is planted in 30 inch rows and the field is 2000 feet in length. The hopper of your combine can hold 200 bushel of corn before it needs to be dumped. If the corn is yielding 180 bushel/acre, how many passes (2000 feet) can you make with the combine before you need to dump the hopper? Hint (one acre equals 43560 square feet)

13. We are planning to plant corn in a 10 acre field. We have set a goal to yield 200 bushels of corn per acre. The old wise neighbor down the road told us that we will need to put one pound of nitrogen per acre on the field for every bushel of corn we want to produce. If we have a dry fertilizer that comes in 50 pound bags that we are going to broadcast on the field, and the fertilizer is a 40-0-10, how many pounds of fertilizer will we need to spread on each acre to reach our yield goals?

How many pounds of fertilizer will need to be spread on the whole field to reach our yield goals? How many bags is this equivalent to?

If the fertilizer is sold by the pallet (40 bags per pallet), how many pallets do we need to order?

14. You are given the task to spray Round Up around the trees, house, and landscape at your home. You have a 2 ½ gallon pump sprayer. The label on the Round Up container recommends that an effective Round up Herbicide mixture is 3%. That means 97% water, 3% Round Up. If you are going to fill the sprayer up, and maintain the correct mixture rate, how many ounces of Round up will you put in the sprayer? Hint: You must find out how many ounces are in one gallon before you start this problem

15. You will be installing an outdoor concrete patio on the back of your house. The patio is going to be 16' X 32'. The local contractor recommends pouring concrete patios at least 4 inches thick. If you take the contractor's recommendation, how many yards of concrete should you order from the local ready mix plant? If the concrete cost is \$145 per yard, how much will the concrete cost? Hint: Concrete is sold by the yard, which means a cubic yard, or 3 foot by 3 foot by 3 foot, which is equivalent to 27 cubic feet.

16. If there is an apple orchard with 20 trees, each tree has 30 apples, how many apples are at the orchard? No, this is NOT a trick question.

17. Alex's tractor gets 15 miles to the gallon. If he purchases 200 gallons of fuel, how far can he travel on that one purchase?

18. Linder farms has 3 hired farmhands that work exactly 12 hours each in one day. They all get paid \$12.50 an hour. How much will Mr. Linder owe after one day of hiring these three farmhands?

19. There are 14 rows of cherry tomatoes in the garden, each row averages 400 tomatoes. If the farmer sells  $\frac{1}{2}$  of his yield to local restaurants, how many tomatoes are left after selling to local restaurants?

20. A farmer is planting his field of cotton. His planter is 20 rows, and he needs to plant the field with 14,260 rows to meet his contract. How many passes must he make in the field to plant this many rows? If each pass takes 6 minutes, how long will it take this farmer to plant this field?

21. Farmer Joe has 8 calves that he wants to sell. Each calf weighs 700 pounds. A buyer will give him \$1.05 per pound. How much money will he bring in from the sale of all 8 calves.

22. A farmer has 20 turkeys in his breeding pen. Each turkey eats 0.6 pounds of turkey crumbles each day. A 50# bag of turkey crumbles costs \$15. How many days does a 50# bag of turkey crumbles last? How much does it cost to feed one turkey for one year? (Assume 365 days in one year)

23. The turkey farmer has 20 turkeys, as mentioned in the previous question. There are 15 hens and 5 Toms, which maintains a 3:1 hen to tom ratio. If each hen can lay 20 fertile eggs during the reproductive season, how many fertile eggs will be produced by all of these hens in one season?

24. Once the turkey eggs have been laid, the farmer has to figure out what to do with them. He knows that he has a market to sell fertile eggs for hatching and can do so at a price of \$5 for each egg. He also knows that he can hatch the eggs and sell the baby turkey poults for \$14 each. However, he knows that NOT EVERY EGG IS GOING TO HATCH. So, based on the premise that only 60% of eggs will hatch, is the farmer going to profit more by selling the eggs or by hatching them and selling the poults? Show your work below.

25. A cattle rancher has a GIANT roll of Fencing that is 10,000 feet in length. She wants to enclose as much area of pasture inside the fence as is geometrically possible. Since she is a High School Geometry teacher, she knows just how to make the pasture so that she can maximize the area enclosed. What shape will her pasture be? What is the maximum amount of area (in acres) that her 10,000 feet of fence will be able to enclose? Hint: One acre is equivalent to 43,560 square feet. Show your work below and also draw the pasture and label distance measurements where applicable.

**BONUS:** Write your own Agricultural based story problem for bonus points!!!