



# Ag is More

## Worksheet A

Name \_\_\_\_\_

**Directions:** Use the correct formulas to find the area, or use measurement properly to find the answers to the questions concerning by-products that come from agriculture. Show your work.

1. The hair on the end of a cow's tail can be used to make a paint brush of medium stiffness for painting pictures. To make one type of paint brush takes a portion of hair that is  $\frac{1}{8}$  of an inch thick and  $\frac{1}{4}$  inch wide and  $\frac{1}{2}$  inch long. It is fastened into the brush handle. Draw and label a rectangle this size and depth.



2. You have a portion of hair that is  $\frac{1}{8}$  of an inch deep and  $\frac{1}{4}$  of an inch wide in a strip 5 inches long. Draw a diagram. How many paint brushes can be made? Use the information from question #1.
3. It takes almost an 8-ounce glass of milk (1 cup) to manufacture a slice of American cheese. This is because milk is 85% water. If you have a gallon of whole milk, how many slices of cheese can be made from it? (Hint: figure out how many cups of milk are in 1 pint, 1 quart, and 1 gallon.)

4. The fur from a rabbit, the fleece of a sheep or the hair from a cow can all be used to make different kinds of felt.
- A. From one sheep, a mat of wool felt 3 feet by 10 feet can be manufactured. How many squares of felt can be made from this mat if each square is 1 foot by 1 foot?



B. From one rabbit a very fine angora felt can be made into a mat 1 foot wide by 2 foot long. (The fur is plucked from the rabbit similar to brushing your dog.) How many squares can be made if the squares are 1 foot by 1 foot?

- C. Because angora fur from the rabbit is very fine and scarce it is usually mixed with wool from a sheep. It is common for that mixture to be that is half wool and half angora. If the angora in question 4B were mixed this way, how much more felt would be produced?
- D. The hair from cattle makes a very coarse felt that is used in making padding in automobiles. The hair from one beef animal can make a felt pad 4 foot wide by 5 foot long. How many square feet of padding is this?

5. Six large eggs are used to manufacture every quart jar of mayonnaise.
- A. If you have 30 dozen eggs, how many quart jars of mayonnaise can be manufactured?
- B. Only medium eggs are available. If three medium eggs equal two large eggs, how many eggs will be needed to make the same number of jars of mayonnaise?





# Ag is More

## Worksheet B

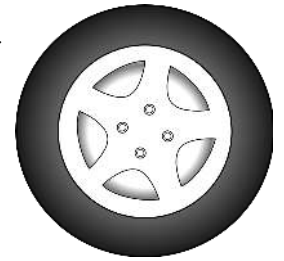
Name \_\_\_\_\_

**Directions:** Use the correct formulas to find the circumference, area, or volume of the by-products below that come from agriculture. Show your work.

1. Tires are a by-product of the glands and organs of beef cattle. Find the circumference and the area of this tire.

Circumference = \_\_\_\_\_

$r = 1.75$  ft.



Area = \_\_\_\_\_

2. Buttons are a by-product of beef, cattle and swine. The radius of button A is 2 cm., the radius of button B is 1 cm., and the radius of button C is 1.5 cm. Find the circumference of buttons B and C and the area of button A.

Button A: Area = \_\_\_\_\_

Button B: Circumference = \_\_\_\_\_

Button C: Circumference = \_\_\_\_\_

3. Many cosmetics are made from the glands and organs of beef and dairy cattle and swine. Find the area of this compact's applicator.

Area: \_\_\_\_\_

$r = 3.5$  cm.



4. Parts of a candle are made from the by-products of beef and dairy cattle. The candle to the right has a radius of 1.5 inches and a height of 9 inches (excluding the wick and flame). What is the volume of the candle?

Volume = \_\_\_\_\_

5. Many medicines include the by-products from the glands and organs of beef cattle. This medicine capsule has a radius of  $1\frac{1}{2}$  cm and a height of  $2\frac{1}{2}$  cm. Find the volume of this capsule.

Volume = \_\_\_\_\_

6. Various types of pet food are by-products of beef cattle, rabbits, and swine. This can of pet food has a radius of  $1\frac{1}{2}$  inches and its height is  $4\frac{1}{2}$  inches. What is the volume of this can of pet food?

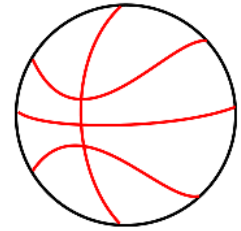
Volume = \_\_\_\_\_

7. Leather is a by-product of the hide of beef and dairy cattle. Leather is used to make a variety of items. Some of those items include shoes, belts, purses, wallets, basketballs, volleyballs, and footballs. Find the volume and surface area for both the basketball and volleyball.

A. Basketball:  $r = 4.5$  inches

$V =$  \_\_\_\_\_

$SA =$  \_\_\_\_\_



B. Volleyball:  $r = 3.75$  inches

$V =$  \_\_\_\_\_

$SA =$  \_\_\_\_\_



8. Believe it or not, gum includes some of the by-products from the bones and horns of beef cattle. Find the surface area and volume of this gumball.

$r = 2.5$ cm

$V =$  \_\_\_\_\_

$SA =$  \_\_\_\_\_

