



2008 State Competition
FFA Agricultural Mechanics Contest
University of Missouri

Contestant # _____
Contestant Name _____
Chapter _____

Concrete and Plumbing

50 points

Directions: Please circle the appropriate answer or fill in the blank for each question. When you are finished please turn your sheet in. Remember to put your name, contestant number and chapter on your paper. Not doing so will result in a zero for this section. If you have questions please feel free to ask.

*** Up to 5 safety points will be deducted from your final score if necessary. Please wear your safety glasses and practice safe methods while competing in this activity.**

Concrete Problems

**Show work for full credit, Partial Credit will be given for work shown.
See the following page for illustrations for the following problems.**

1. You are adding on to your grain storage facility. You are putting up a new grain bin and pouring the concrete yourself. See the following page for the dimensions and thickness for grain bin pad. (Assume 10% waste factor)

How many cubic yards of concrete should you order to pour the floor? (5 Points)

2. You are planning on building a new machine shed with a concrete floor, and are wanting and estimate on how much the floor will cost. See the following page for building dimensions. (Assume 10% waste factor)

(Concrete cost \$96.00 per **cubic yard** delivered)

How many **cubic feet** of concrete should you order to pour the shed floor? (5 Points)

What is the total amount that the concrete will cost for the floor? (5 Points)

Plumbing and Concrete Tool Identification

1 Point Each

Identify 10 of the following tools.

Put the correct letter in the blank next to the correct name.

3. Bull Float _____
4. Spade bit _____
5. Concrete edger _____
6. Concrete Grover _____
7. Tubing cutter _____
8. Wood float _____
9. PVC pipe cutter _____
10. Jitter Bug _____
11. Flaring Tool _____
12. Magnesium Float _____
13. Steel Float _____
14. Masonry Bit _____
15. Tap and Die Set _____

Plumbing Skill

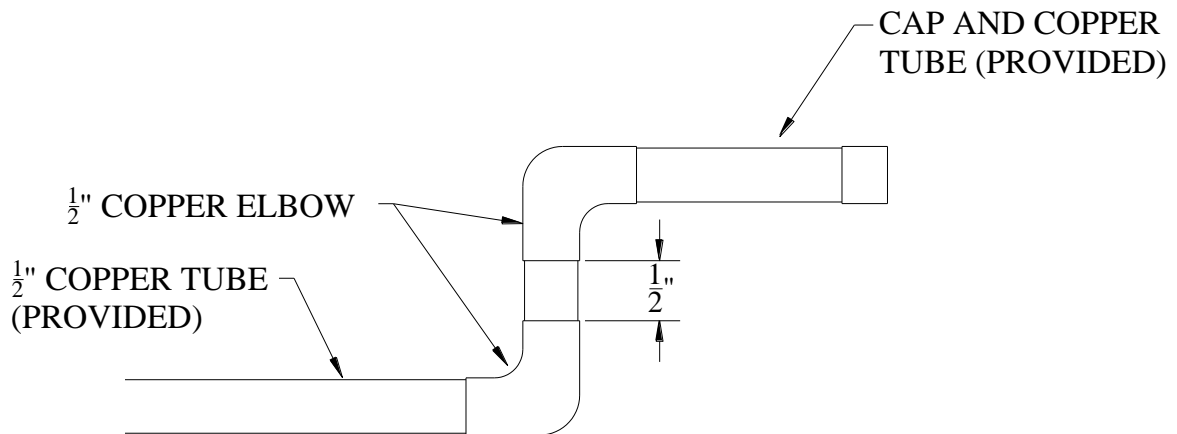
Assemble the copper pipe as shown in the drawing below.

Materials Needed:

- | | |
|--|----------------|
| 1. (2)-1/2" Copper Elbows | 5. Emery Paper |
| 2. (1) Piece Copper Tubing (Provided) | 6. Flux |
| 3. (1) Piece Copper Tubing with Cap (Provided) | 7. Solder |
| 4. Tubing cutter | 8. Torch |

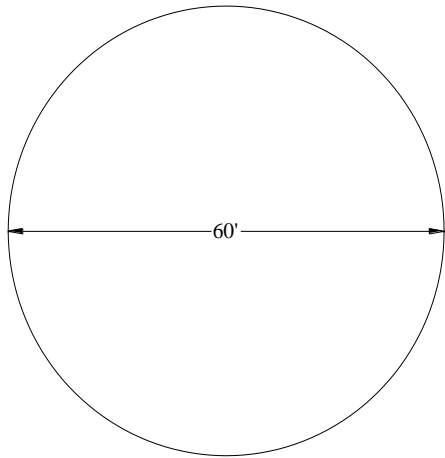
Directions:

1. Obtain a piece of 1/2" copper with a cap already soldered on it, and a piece of 1/2" copper tubing.
2. Cut a piece of copper tubing of the supplied piece (without the cap soldered to it) so that the space between the two copper elbows are 1/2" apart (see drawing)
3. Solder the two elbows and pieces of copper together as shown in the drawing. (Assemble as straight as possible.)
4. Cool tubing off.
5. Place sticker with your name and school number on the copper tubing and turn in to an official.

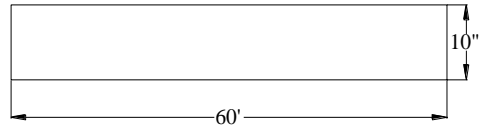


<u>Scoring</u>	<u>Points Possible</u>	<u>Score</u>
1. Neatness	4 Pts	_____
2. Passes pressure test	8 Pts	_____
3. Correct lengths	8 Pts	_____
4. Safety	5 Pts	_____
5. Hot Material	-2 Pts	_____
25 Points Possible <u>Total:</u>		_____

Drawing for Problem Number 1



Top/Plan View



Side/Section View

Drawings for Problem Number 2 and 3

