2013 Cowboy Classic
Agricultural Technology and Mechanical Systems
Electrical Systems – Wiring Skill

You are in charge of all maintenance for the Huxtable Greenhouse and Growing Operation. As you are performing your regularly scheduled maintenance, you determine that the motor in the fan system of one of your greenhouses has recently quit working. In order to keep your plants healthy, you need to replace it as soon as possible. The new system that you have purchased requires a 240v circuit and for ease of use, must also be wired for use with a 50-amp receptacle. Use the materials provided to wire the system circuit into the appropriate breaker and 50-amp receptacle.

1) Circle the following that best represents the equation for Ohm's Law? (1 pt)

$$I \text{ x } R = V^2 \qquad \frac{R.P}{RV} = I \qquad \frac{V.P}{R} = I \qquad \frac{V}{R} = I$$

2) Define the following terms. (3 pts)

Voltage: _____

Amperage: _____

Ohms: _____

3) Which of the following ways can Ohm's Law be expressed? (Circle all that apply)(3 pts)

$$V = R \text{ x } I \qquad I = \frac{P}{V} \qquad V = \sqrt{P \text{ x } R}$$

Use this chart to answer the following questions.	Baldor Grinders - Buffers		
Cat. No.	1022W		
H.P.	1	Volts	115 / 230
Phase	1	Amps	5.4 / 2.7
Cycle	60	R.P.M.	1800
Frame	528C	Serial No.	F680
SPEC No.	G10 – 164 - 2		

a) What is the AC current amperage draw for 230v? (1 pt) _____

b) Calculate resistance for a 115v and 230v configuration. (2 pts.) 115 = _____   230 = _____

Criterion	Points possible	Points earned
Questions	10	
Wiring of Breaker	8	
Wiring of Switch	8	
Safety	4	
Total	30	

Name_____   School_____   Contestant Number _____