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Power worksheet answer key

ANSWER PLEASE HOME ENERGY AUDIT: POWER WORKSHEET ANSWER KEY Created for the NTEP II program on behalf of the National Renewable Energy Laboratory in Golden, Colorado. 1. Explain how work and energy are affected by energy. Power is the speed at which energy is transferred and power is the measure of how fast the work can be done. 2. Using the equation for power, determine how much wattage is involved if 300 joules of work are done in 10 seconds. Power - Work/Time----- (P-W/T) so 300 joules/10 seconds - 30 joules/second or 30 watts. 3. How many times more would a 10-watt bulb be able to burn compared to a 100-watt bulb with the same energy? 100 watts /10 watts - 10 or 10 times longer 4. Rank the following elements from the lowest power requirement to the highest power required. ___3rd____ a 100-watt bulb burns for 2 hours (100/2 - 50 a 100-watt bulb burns for 2 hours) ___2nd____ a 40-watt bulb burns for 4 hours (40/4 - 10 a 40-watt bulb burns for 40 watts 4 hours) ___5th____ a 1500-watt hairdryer is used for 0.5 hours (1500/.5 -3000 a 1500 watt hairdryer is used for 0.5 hours) ___4th____ a 500 watt microwave works for 0.5 hours (500/.5 - 1000 a 500-watt microwave runs for 0.5 hours (500/.5 - 1000 a 500 watt microwave runs for 0.5 hours (500/.5 1000 a 500-watt microwave runs for 0.5 hours) ___1st____ a 15-watt compact fluorescent light burns for 10 hours (15/10 - 1.5 a 15-watt compact fluorescent light burns for 10 hours) 5. Calculate how much it would cost to run a 1,000-watt projector for 8 hours if 1 kilowatt hour costs $0.15. 1000 - 1 kilowatt x 8 hours - 8 kilowatt hours x $0.15 - $1.20 6. How do lighting requirements differ between your school's hallway, gym and library? How do you suggest that these areas be lit? The answers vary by school. Print the answer key (only the test content will be printed) Instructions: Read each question carefully. Choose the answer that best matches the question. Short answer questions must be answered in complete sentences. If the question involves calculations, you must show all your math work. ANSWER PLEASE HOME ENERGY AUDIT: POWER WORKSHEET ANSWER KEY Created for the NTEP II program on behalf of the National Renewable Energy Laboratory in Golden, Colorado. 1. Explain how work and energy are affected by energy. Power is the speed at which energy is transferred and power is the speed of work can be done. 2. Using the equation for power, determine how much wattage is involved if 300 joules of work are done in 10 seconds. Power - Work/Time----- (P-W/T) so 300 joules/10 seconds - 30 joules/second or 30 watts. 3. How many times more would a 10-watt bulb be able to burn compared to a 100-watt bulb with the same energy? 100 watts /10 watts - 10 or 10 times longer 4. Rank the following elements from the lowest power requirement to the highest power required. ___3rd____ a 100 watt bulb for 2 hours (100/2 - 50 a 100 watt bulb burns for 2 hours) ___2nd____ a 40-watt bulb burns for 4 hours (40/4 - 10 a 40 watt bulb burns for 4 hours) ___5th____ a 1500 watt hairdryer is used for 0.5 hours (1500/.5 - 3000 to 150 0 watt hair dryer is used for 0.5 hours) ___4th____ a 500-watt microwave runs for 0.5 hours (500/.5 -1000 a 500-watt microwave works for 0.5 0.5 hour) ___1st____ a 15-watt compact fluorescent light burns for 10 hours (15/10 - 1.5 a 15-watt compact fluorescent light burns for 10 hours) 5. Calculate how much it would cost to run a 1,000-watt projector for 8 hours if 1 kilowatt hour costs $0.15. 1000 - 1 kilowatt x 8 hours - 8 kilowatt hours x $0.15 - $1.20 6. How do lighting requirements differ between your school's hallway, gym and library? How do you suggest that these areas be lit? The answers vary by school. Print the answer key (only the test content will be printed) Instructions: Read each question carefully. Choose the answer that best matches the question. Short answer questions must be answered in complete sentences. If the question involves calculations, you must show all your math work. Work.