Potential Difference Calculations Worksheet

potential difference = $\frac{\text{energy}}{\text{charge}}$

$V = \frac{E}{Q}$ Units: V is V (volts)
Q is C (coulombs)
E is J (joules)

1. Find the unknown quantity:

a) V = ? E = 45 J Q = 15 C	b) V = 9 V E = ? Q = 150 C	c) V = 1.5 V E = 225 J Q = ?

2. Find the unknown quantity (CONVERT FIRST to volts, joules, or coulombs)

a) V = 1000 mV = _____ V E = ? Q = 20 C	b) V = ? E = 1.25 kJ = _____ J Q = 1500 C	c) V = 1.21 GV =_____V E = ? Q = 2 000 000 C

WORD PROBLEMS

1. The potential difference between the two terminals on a battery is 9 volts. How much work (energy) is required to transfer 10 coulombs of charge across the terminals?

2. Ten joules of work (energy) are required to transfer 2 coulombs of charge from X to Y. What is the difference in potential between these two points?

3. It requires 600 joules of energy to transfer a quantity of charge between points C and D of a circuit, which have a potential difference of 30 volts. How much charge is transferred?