Current & Charge Calculations Worksheet

$$\frac{Q}{I\ T}$$

current = charge moving past a point / time	$I = \dfrac{Q}{t}$	Units: I is A (amperes)
		Q is C (coulombs)
		t is s (seconds)

1. Find the unknown quantity:

a) I = 0.4A	b) I = ?	c) I = 2 A
Q =	Q = 240 C	Q = 400 C
t = 20 s	t = 300 s	t = ?

2. Find the unknown quantity (CONVERT FIRST to seconds)

a) I =	b) I = 0.3 A	c) I = 0.9 A
Q = 140 C	Q =	Q =
t = 4 min = _____ s	t = 1.5 hours = _____ s	t = 3 min = _____ s

WORD PROBLEMS

1. If there is a current of 10 amperes in a circuit for 10 minutes, what quantity of electric charge flows in through the circuit?

2. How much current must there be in a circuit if 100 coulombs flow past a point in the circuit in 4 seconds?

3. How much time is required for 10 coulombs of charge to flow past a point if the rate of flow (current) is 2 amperes?

4. What amount of charge passes through a 3.0 amp television in 1.3 hours?

5. What current does a stereo receiver draw if used for 2 minutes and goes through 10 coulombs of charge?

6. How long can a flashlight run for if it draws 0.11 amps and its battery contains 10 coulombs of charge?

7. If 15 coulombs of charge pass through a light bulb in 5 minutes, what amount of current passes through the bulb?

8. An ipod runs for 8 hours while drawing 0.05 amps of current, how many coulombs of charge does the ipod contain?

9. A student leaves a 5 amp stereo on in their car and drains the 10000 coulomb battery. How long did the stereo stay on for?