Lesson 1 Solutions

1) Convert **500 meters to kilometers**
Use metric system equivalences
0.5

2) Convert **5*10^{-7} meters to millimeters**
Use metric system equivalences
5000

3) Knowing that **1 inch is 2.54 centimeters**, convert **54 inches to meters**
Use unit conversions
1.37

4) Knowing that **1 inch is 2.54 centimeters**, convert **54 meters to inches**
Use unit conversions
2125.98

5) Given the formula **F = (C × 9/5) + 32**, where F means Fahrenheit degrees and C means celsius degrees, how many Celsius degrees are 50 Fahrenheit degrees?
Solve equation for C
10

6) Which is the minimum voltage we can expect in a battery of **10 volts and ±20% tolerance**?
Subtract tolerance% to value
8

7) Which is the maximum voltage we can expect in a battery of **9 volts and ±0.5% tolerance**?
Add tolerance% to value
9,045

8) Given the formula **A = B * C / D**, which transformation to get **D** is correct?
Solve equation for D
a) D = B * C / A
b) D = A * B / C
c) D = C * B * A
d) D = A / B * C

9) Given the formula **A = 5 + ((4B * C + B) / D)**, which transformation to get **B** is correct?
Solve equation for B
a) B = (4A + 4) / (D * C)
b) B = 5A / D * C
c) B = ((A - 5) * D) / (4C + 1)
d) B = ((B - 4) * D) / (5C + 1)

10) Given the formula **B = ((C * D) / A) / E**, we have the following values:

- **C = 8 feet**
- **A = 40 degrees Fahrenheit**
- **E = 50 mm**
- **B = 2 hours**

An we know that:

- **1 feet = 30.48 cm**
- We know the relation between Fahrenheit and Celsius from exercice 5
- **K = C+273.15** is the relation between Kelvin and Celsius degrees

Given the formula works in SI units, what is the value of D?

Solve equation for D and use unit conversions

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