

Blog Entry © Friday, May 30, 2025, Ballistic Coefficient Exercises from Exterior ballistics, 1935 Written by Ernest Edward Herrmann, C/C++ Code by James Pate Williams, Jr., BA, BS, Master of Software Engineering, PhD Computer Science

Exercises 1 Page 41

The textual hand computations are by Lieutenant Commander Ernest Edward Herrmann. Those calculations were made using logarithms and thus differ from my computer calculations. See the percentage differences at the end of the eight problems.

Problem 1 $\log_{10} BC = 0.15710$

Input Data	
Diameter (Inches)	3.000000
Weight (Pounds)	13.000000
Coeff of Form	1.00000
Temperature (F)	61.000000
Pressure (Inches Hg)	29.800000
log Base 10 BC	0.157563
BC	1.437352
Density	1.203426

Ok Cancel

Problem 2 $\log_{10} BC = 0.49268$

Compute Ballistic Coefficient

Input Data

Diameter (Inches)	4.000000
Weight (Pounds)	33.000000
Coeff of Form	0.670000
Temperature (F)	65.000000
Pressure (Inches Hg)	29.600000
$\log_{10} BC$	0.492810
BC	3.110359
Density	1.203426

Ok Cancel

Problem 3 $\log_{10} BC = 0.51734$

Compute Ballistic Coefficient

Input Data

Diameter (Inches)	5.000000
Weight (Pounds)	50.000000
Coeff of Form	0.590000
Temperature (F)	57.000000
Pressure (Inches Hg)	30.250000
$\log_{10} BC$	0.517829
BC	3.294796
Density	1.203426

Ok Cancel

Problem 4 $\log_{10} BC = 0.67524$

Compute Ballistic Coefficient

Input Data

Diameter (Inches)	6.000000
Weight (Pounds)	105.000000
Coeff of Form	0.610000
Temperature (F)	70.000000
Pressure (Inches Hg)	30.500000
$\log_{10} BC$	0.675580
BC	4.737835
Density	1.203426

Ok Cancel

Problem 5 $\log_{10} BC = 0.84437$

Compute Ballistic Coefficient

Input Data

Diameter (Inches)	8.000000
Weight (Pounds)	260.000000
Coeff of Form	0.610000
Temperature (F)	85.000000
Pressure (Inches Hg)	29.750000
$\log_{10} BC$	0.844597
BC	6.991932
Density	1.203426

Ok Cancel

Problem 6 $\log_{10} BC = 1.01811$

Compute Ballistic Coefficient

Input Data

Diameter (Inches)	12.000000
Weight (Pounds)	870.000000
Coeff of Form	0.610000
Temperature (F)	93.000000
Pressure (Inches Hg)	30.200000
$\log_{10} BC$	1.018197
BC	10.427911
Density	1.203426

Ok Cancel

Problem 7 log 10 BC = 1.01401

Compute Ballistic Coefficient

Input Data

Diameter (Inches)	14.000000
Weight (Pounds)	1400.000000
Coeff of Form	0.700000
Temperature (F)	69.000000
Pressure (Inches Hg)	29.800000
log Base 10 BC	1.014027
BC	10.328258
Density	1.203426

Ok Cancel

Problem 8 log 10 BC 1.09482

Compute Ballistic Coefficient

Input Data

Diameter (Inches)	16.000000
Weight (Pounds)	2100.000000
Coeff of Form	0.610000
Temperature (F)	32.000000
Pressure (Inches Hg)	30.150000
log Base 10 BC	1.094910
BC	12.442555
Density	1.203426

Ok Cancel

Percentage Differences

Percentage Difference [1] = 0.294283%

Percentage Difference [2] = 0.026383%

Percentage Difference [3] = 0.094477%

Percentage Difference [4] = 0.050340%

Percentage Difference [5] = 0.026880%

Percentage Difference [6] = 0.008545%

Percentage Difference [7] = 0.001676%

Percentage Difference [8] = 0.008220%