CONTENTS

Chapter 1: HOW TO READ THE SCALES 1
Nomenclature • C and D Scales • Two-Digit Numbers • Three-Digit Numbers • *Exercise*

Chapter 2: OHM'S LAW AND THE C AND D SCALES 8
Multiplication: Primary Digits — *Examples* — Secondary Digits — *Examples* — Tertiary Digits — *Examples* • Division • *Examples* • *Exercises*

Chapter 3: POWERS OF TEN 16
Standard-Form Estimating • *Examples* • *Exercises*

Chapter 4: RULES OF EXPONENTS 19
Multiplication • *Examples* • Division • *Examples* • *Exercises*

Chapter 5: PARALLEL RESISTANCE AND COMBINED OPERATIONS 23
Examples • *Exercises*

Chapter 6: WATT'S LAW AND THE A AND B SCALES 27
Power: Using Current Equation — *Examples* — Using Voltage Equation — *Examples* • *Exercises*

Chapter 7: TRANSFORMER TURNS RATIO AND THE C AND D SCALES 32
Voltage and Current • *Examples* • *Exercises*

Chapter 8: INDUCTIVE REACTANCE AND CONTINUED PRODUCTS 35
Inductive Reactances • *Examples* • Word Problems • *Exercises*

Chapter 9: IMPEDANCE AND THE B SCALE 39
Inductance-Resistance Circuits • *Examples* • Capacitance-Resistance Circuits • *Exercises*

Chapter 10: PERIOD AND THE INVERTED SCALE 43
Period • *Examples* • Other Reciprocal Functions • *Exercises*

Chapter 11: POWER GAIN AND THE L SCALE 47
Logarithms • *Examples* • Negative Characteristic • *Examples* • Word Problems • *Examples* • *Exercises*

Chapter 12: PHASE ANGLE AND THE T SCALE 52
Tangent Functions • *Examples* • Tangent Functions When T Scale Is On The Stock • *Examples* • Tangent Functions of Angles • *Examples* • *Exercises*

Chapter 13: IMPEDANCE AND THE S SCALE 58
The S Scale • The Sine Function • *Examples* • Sine • *Examples* • Sine Function Applied to Circuit Problems • The Cosine Scale • *Examples* • Cosine Function • (Unmarked Rules) • *Examples* • *Exercises*

Chapter 14: POLAR-TO-RECTANGULAR TRANSFORMATION 66
Notation • Rectangular Addition • *Examples* • Transformation to Rectangular Form • *Examples* • Polar-to-Rectangular Transformation (Special Rules) • *Examples* • *Exercises*

Chapter 15: RECTANGULAR-TO-POLAR TRANSFORMATION 72
Vector Division • Vector Addition • Transformations • *Examples* • Summing Up • *Exercises*

Chapter 16: THE NATURAL BASE ϵ 78
ϵ Raised to a Positive Exponent • The LL3 Scale • *Examples* • The LL2 Scale • *Examples* • The LL1 Scale • *Examples* • ϵ Raised to a Negative Exponent • The LL01, LL02, and LL03 Scales • *Examples* • The The LL0 and LL00 Scales • *Examples* • *Exercises*

Chapter 17: RC CIRCUITS 86
Examples • *Exercises*

Chapter 18: INDUCTIVE REACTANCE AND THE FOLDED SCALES 90
Folded Scales and Combined Operations • *Examples* • Inductive Reactance • *Examples* • *Exercises*

Chapter 19: RATIO AND MULTIPLICATION ON THE FOLDED SCALES 94
Time Saving • Ratios • *Examples* • *Exercises*

Chapter 20: CAPACITIVE REACTANCE AND THE CIF SCALE 96
Capacitive Reactance • *Examples* • *Exercises*

APPENDIX A: New Prefixes for Units 100
APPENDIX B: Exponentials 101
ANSWERS TO PROBLEMS 104

INDEX 109