

**SINCLAIR COMMUNITY COLLEGE
DAYTON, OHIO**

**MATERIALS AVAILABLE FOR
MATH 117 - TRIGONOMETRY
SEPTEMBER 9, 2009**

Appendix B. Graphs of Equations

Mosely Trig DVD #1, P.3
Trigonometry Interactive Exercises 1.1
V-LHS 1.1 "Basic Concepts" (or Trig Video 1)
116 (traditional) CD Lectures Disk 2, 2.1
201-204 CD Lectures Disk 1, P.1-P.4
EV 4013 "Circles, Midpoint Formula, and Distance Formula"
116 Mathspace Chapter 2, 2.1
116 Nongraphing Computer Tutor 2.1
College Algebra Interactive Exercises 1.7
116 Computer Tutor Review 4.1, 11.1-11.5

Appendix C. Functions

Mosely Trig DVD #2, P.5 - P.6
V-LHS 1.1 "Basic Concepts" (or Trig Video 1)
Trigonometry Interactive Exercises 1.1
116 (traditional) CD Lectures Disk 3, 2.2-2.6
116 Mathspace Chapter 2, 2.2-2.6
201-204 CD Lectures Disk 1, P.1-P.4
116 Nongraphing Computer Tutor 2.1
116 Computer Tutor Review 4.1, 11.1-11.5
EV 4015 "Functions"
101-102 InterAct Chptr 7.3 (functions)
101 & 102 CD Lectures 7.3 (functions)
V-BEJ Tape 7.4 (functions)
VCOMAP Tape 22 Part A "Functions"
WORKSHEET "Functions: Domain and Range"

I. Trigonometric Functions

1. Angles

117 CD Lectures 1.1
Mosely Trig DVD #2, 1.1
117 Interact 1.1
Trigonometry Interactive Exercises 1.2
V-LHS 1.2-1.3 “Angles, Their Relationships, and Similar Triangles”
(or Trig Video 1)
Computer-Video Lesson 20 “Introduction To Trigonometry” (video)
EV 1122 “Lines, Angles, and Triangles”
Chalkdust Video 1 Section 1 “Angles and Triangles”

2. Angle Relationships and Similar Triangles

117 CD Lectures 1.2
117 Interact 1.2
Trigonometry Interactive Exercises 1.3
V-LHS 1.2-1.3 “Angles, Their Relationships, and Similar Triangles”
(or Trig Video 1)
EV 7008 “Similarity”

3. Trigonometric Functions

117 CD Lectures 1.3
Mosely Trig DVD #2, 1.2
117 Interact 1.3
Trigonometry Interactive Exercises 1.4
V-LHS 1.4-1.5 “Definitions of the Trig Functions and Their Use”
(or Trig Video 1)
Computer-Video Lessons 21 and 22 (videos)

4. Using the Definitions of the Trigonometric Functions

117 CD Lectures 1.4
Mosely Trig DVD #2, 1.2
117 Interact 1.4
Trigonometry Interactive Exercises 1.5
V-LHS 1.4-1.5 “Definitions of the Trig Functions and Their Use”
(or Trig Video 1)
Computer-Video Lesson 21 and 22 (videos)

II. Acute Angles and Right Triangles

1. Trigonometric Functions of Acute Angles

117 CD Lectures 2.1
Mosely Trig DVD #2, 1.3, DVD #3, 1.4
117 Interact 2.1
Trigonometry Interactive Exercises 2.1
V-LHS 2.1-2.3 “Trig Functions of Acute and Non-Acute Angles and Finding Them with a Calculator” (or Trig Video 2)
VHM Tape 7 “Special Angles 30, 45, and 60”
Computer-Video Lesson 21 (2 tapes)

2. Trigonometric Functions of Non-Acute Angles

117 CD Lectures 2.2
Mosely Trig DVD #3, 1.4
117 Interact 2.2
Trigonometry Interactive Exercises 2.2
V-LHS 2.1-2.3 “Trig Functions of Acute and Non-Acute Angles and Finding Them with a Calculator” (or Trig Video 2)
Computer-Video Lesson 21 (video)

3. Finding Trigonometric Function Values Using a Calculator

117 CD Lectures 2.3
117 Interact 2.3
Trigonometry Interactive Exercises 2.3
V-LHS 2.1-2.3 “Trig Functions of Acute and Non-Acute Angles and Finding Them with a Calculator” (or Trig Video 2)

4. Solving Right Triangles

117 CD Lectures 2.4
Mosely Trig DVD #2, 1.3
117 Interact 2.4
Trigonometry Interactive Exercises 2.4
V-LHS 2.4, 2.5 “Solving Right Triangles and Applications”
(or Trig Video 2)
EV 5012 “Right Triangle Applications”
VHM Tape 13 “Applications of Right Triangles”
Computer-Video Lesson 22 (Parts 1, 2, 3) (video)

II. 5. Further Applications of Right Triangles

117 CD Lectures 2.5
Mosely Trig DVD #2, 1.3
117 Interact 2.5
Trigonometry Interactive Exercises 2.5
V-LHS 2.4-2.5 “Solving Right Triangles and Applications”
(or Trig Video 2)
VHM Tape 13 “Applications of Right Triangles”
EV 5012 “Right Triangle Applications”
Computer-Video Lesson 22 (Parts 1, 2, 3) (video)

III. Radian Measure and Circular Functions

1. Radian Measure

117 CD Lectures 3.1
Mosely Trig DVD #2, 1.1
117 Interact 3.1
Trigonometry Interactive Exercises 3.1
V-LHS 3.1-3.2 “Radian Measurement and Applications”
(or Trig Video 3)
EV 5001 “Angles, Degrees, and Radians”
Mastering Calculus, Trigonometry, “Radians, Arcs, Sectors”

2. Applications of Radian Measure

117 CD Lectures 3.2
Mosely Trig DVD #2, 1.1
117 Interact 3.2
Trigonometry Interactive Exercises 3.2
V-LHS 3.1-3.2 “Radian Measurement and Applications”
(or Trig Video 3)
EV 5001 “Angles, Degrees, and Radians”
Mastering Calculus, Trigonometry, “Radians, Arcs, Sectors”

3. The Unit Circle and Circular Functions

117 CD Lectures 3.3
Mosely Trig DVD #2, 1.2
117 Interact 3.3
Trigonometry Interactive Exercises 3.3
V-LHS 3.3-3.4 “Circular Functions, Linear and Angular Velocity”
(or Trig Video 3)

IV. Graphs of the Circular Functions

1. Graphs of the Sine and Cosine Functions

117 CD Lectures 4.1
Mosely Trig DVD #3, 1.5
117 Interact 4.1
Trigonometry Interactive Exercises 4.1
V-LHS 4.1-4.3 "Graphs of the Trig Functions" (or Trig Video 4)
EV 5005 "Graphing Trig Equations I"
VHM Tape 9 "Graphs of $Y=A \sin BX$ and $Y=A \cos BX$ "

2. Translations of the Graphs of the Sine and Cosine Functions

117 CD Lectures 4.2
Mosely Trig DVD #3, 1.5
117 Interact 4.2
Trigonometry Interactive Exercises 4.2
V-LHS 4.1-4.3 "Graphs of the Trig Functions" (or Trig Video 4)
VHM Tape 10 "Vertical and Horizontal Translations"
EV 5005 "Graphs of Trig Functions I"

3. Graphs of the Tangent and Cotangent Functions

117 CD Lectures 4.3
Mosely Trig DVD #3, 1.6
117 Interact 4.3
Trigonometry Interactive Exercises 4.3
V-LHS 4.1-4.3 "Graphs of the Trig Functions" (or Trig Video 4)
EV 5006 "Graphing Trig Equations II"
VHM-10 "Vertical and Horizontal Translations"

4. Graphs of the Secant and Cosecant Functions

117 CD Lectures 4.4
Mosely Trig DVD #3, 1.6
117 Interact 4.4
Trigonometry Interactive Exercises 4.3
V-LHS 4.1-4.3 "Graphs of the Trig Functions" (or Trig Video 4)
EV 5006 "Graphing Trig Equations II"
VHM-10 "Vertical and Horizontal Translations"

V. Trigonometric Identities

HANDOUT “Trigonometric Identities”

1. Fundamental Identities

117 CD Lectures 5.1
Mosely Trig DVD #4, 2.1
117 Interact 5.1
Trigonometry Interactive Exercises 5.1
V-LHS 5.1-5.2 “Fundamental Identities and Verifying Identities”
(or Trig Video 5)

2. Verifying Trigonometric Identities

117 CD Lectures 5.2
Mosely Trig DVD #4, 2.2
117 Interact 5.2
Trigonometry Interactive Exercises 5.2
V-LHS 5.1-5.2 “Fundamental Identities and Verifying Identities”
(or Trig Video 5)
VHM Tape 8 “Evaluating and Rewriting Trig Expressions”

3. Sum and Difference Identities for Cosine

117 CD Lectures 5.3
Mosely Trig DVD #4, 2.4
117 Interact 5.3
Trigonometry Interactive Exercises 5.3
V-LHS 5.3-5.4 “Sum and Difference Identities” (or Trig Video 5)
EV 5008 “Trig Identities II”

4. Sum and Difference Identities for Sine and Tangent

117 CD Lectures 5.4
Mosely Trig DVD #4, 2.4
117 Interact 5.4
Trigonometry Interactive Exercises 5.4
V-LHS 5.3-5.4 “Sum and Difference Identities” (or Trig Video 5)
EV 5008 “Trig Identities II”

V. 5. Double-Angle Identities

117 CD Lectures 5.5
Mosely Trig DVD #4, 2.5
117 Interact 5.5
Trigonometry Interactive Exercises 5.5
V-LHS 5.5-5.6 “Double and Half-Angle Identities” (or Trig Video 5)
EV 5009 “Trig Identities III”

6. Half-Angle Identities

117 CD Lectures 5.6
Mosely Trig DVD #4, 2.5
117 Interact 5.6
Trigonometry Interactive Exercises 5.6
V-LHS 5.5-5.6 “Double and Half-Angle Identities” (or Trig Video 5)
EV 5009 “Trig Identities III”

VI. Inverse Circular Functions and Trigonometric Equations

1. Inverse Circular Functions

117 CD Lectures 6.1
Mosely Trig DVD #3, 1.7
117 Interact 6.1
Trigonometry Interactive Exercises 6.1
V-LHS 6.1 “Inverse Trig Functions” (or Trig Video 6)
EV 5010 “Inverse Trigonometric Functions”
VHM Tape 11 “Inverse Trigonometric Expressions”
WORKSHEET “Inverse Trigonometric Functions”

2. Trigonometric Equations I

117 CD Lectures 6.2
Mosely Trig DVD #4, 2.3
117 Interact 6.2
Trigonometry Interactive Exercises 6.2
V-LHS 6.2-6.4 “Trig Eqns. and Inverse Trig Eqns.” (or Trig Video 6)
EV 5011 “Trigonometric Equations”
VHM Tape 12 “Solving Trigonometric Equations”

VI. 3. Trigonometric Equations II

117 CD Lectures 6.3
Mosely Trig DVD #4, 2.3
117 Interact 6.3
Trigonometry Interactive Exercises 6.3
V-LHS 6.2-6.4 “Trig Eqns. and Inverse Trig Eqns.” (or Trig Video 6)
EV 5011 “Trigonometric Equations”
VHM Tape 12 “Solving Trigonometric Equations”

4. Equations Involving Inverse Trigonometric Functions

117 CD Lectures 6.4
Mosely Trig DVD #4, 2.3, DVD #3: 1.7
117 Interact 6.4
Trigonometry Interactive Exercises 6.4
V-LHS 6.2-6.4 “Trig Eqns. and Inverse Trig Eqns.” (or Trig Video 6)
EV 5010 “Inverse Trigonometric Functions”
WORKSHEET “Inverse Trigonometric Functions”

VII. Applications of Trigonometry and Vectors

1. Oblique Triangles and the Law of Sines

117 CD Lectures 7.1
Mosely Trig DVD #4, 3.1
117 Interact 7.1
Trigonometry Interactive Exercises 7.1
V-LHS 7.1-7.3 “Law of Sines and Law of Cosines” (or Trig Video 7)
VHM Tape 14 “Law of Sines and Law of Cosines”

2. The Ambiguous Case of the Law of Sines

117 CD Lectures 7.2
Mosely Trig DVD #4, 3.1
117 Interact 7.2
Trigonometry Interactive Exercises 7.2
V-LHS 7.1-7.3 “Law of Sines and Law of Cosines” (or Trig Video 7)
VHM Tape 14 “Law of Sines and Law of Cosines”

VII. 3. The Law of Cosines

117 CD Lectures 7.3
Mosely Trig DVD #4, 3.2
117 Interact 7.3
Trigonometry Interactive Exercises 7.3
V-LHS 7.1-7.3 “Law of Sines and Law of Cosines” (or Trig Video 7)
VHM Tape 14 “Law of Sines and Law of Cosines”

**4. Vectors, Operations, and the Dot Product
(through vector operations, p. 338)**

117 CD Lectures 7.4
Mosely Trig DVD #5, 3.3 – 3.4
117 Interact 7.4
Trigonometry Interactive Exercises 7.4
V-LHS 7.4-7.5 “Vectors and Applications” (or Trig Video 7)
EV 6055 “Vector Components”

5. Applications of Vectors

117 CD Lectures 7.5
Mosely Trig DVD #5, 3.3 – 3.4
117 Interact 7.5
Trigonometry Interactive Exercises 7.5
V-LHS 7.4-7.5 “Vectors and Applications” (or Trig Video 7)

VIII. Complex Numbers, Polar Equations, and Parametric Equations

1. Complex Numbers

Trig DVD #5: 4.1, 4.2
117 CD Lectures 8.1
117 Interact 8.1
Trigonometry Interactive Exercises 8.1
V-LHS 8.1-8.2 “Operations on Complex Numbers and Trig Forms”
(or Trig Video 8)
116 (traditional) CD Lectures Disk 1, P.6
EV 4005
116 Mathspace Chapter P, P.6
116 Computer Tutor Review 9.3
101-102 InterAct Chptr 10.7
101 & 102 CD Lectures 10.7
V-BEJ Tape 10.9
VKB Tape 21
VCOMAP Tape 18 Part B “Complex Numbers”

VIII. 2. Trigonometric (Polar) Form of Complex Numbers

117 CD Lectures 8.2
Mosely Trig DVD #5, 4.3
117 Interact 8.2
Trigonometry Interactive Exercises 8.2
V-LHS 8.1-8.2 “Operations on Complex Numbers and Trig Forms”
(or Trig Video 8)
EV 5016
VOM A-34 “Polar and Exponential Forms of Complex Numbers”

3. The Product and Quotient Theorems

117 CD Lectures 8.3
Mosely Trig DVD #5, 4.3
117 Interact 8.3
Trigonometry Interactive Exercises 8.3
V-LHS 8.3-8.4 “Products, Quotients, Powers, & Roots”(or Trig Video 8)
EV 5016
VOM A-35 “Products, Quotients, Powers, and Roots”

4. De Moivre’s Theorem; Powers and Roots of Complex Numbers

117 CD Lectures 8.4
Mosely Trig DVD #5, 4.4
117 Interact 8.4
Trigonometry Interactive Exercises 8.4
V-LHS 8.3-8.4 “Products, Quotients, Powers, & Roots”(or Trig Video 9)
EV 5016
VOM A-35 “Products, Quotients, Powers, and Roots of Complex Nos.”
WORKSHEET “Complex Roots”

5. Polar Equations and Graphs

117 CD Lectures 8.5
Mosely Trig DVD #7, 6.7 – 6.8
117 Interact 8.5
Trigonometry Interactive Exercises 8.5
V-LHS 8.5-8.6 “Polar Equations and Parametric Equations”
(or Trig Video 9)
Chalkdust Video 3 Section 3 “Polar Coordinates and Equations”
EV 5015 “Polar Coordinates”