**I. Kahn Academy: Basic trigonometry --** <https://youtu.be/Jsiy4TxgIME>

**II. National Council of Educational Research and Training (India):** <https://ncert.nic.in/textbook/pdf/jemh108.pdf>

**III. Amatrol unit:** **Trigonometry**

**Trigonometry eLearning Course | Online Math Training for Industry**

**Model Name:**Trigonometry Multimedia Courseware

**Model Number:** MXMA304

Amatrol’s Trigonometry eLearning training course (MXMA304) covers the Cartesian coordinate system and angles, triangles and the Pythagorean theorem, basic trigonometry, circles and semicircles, and applications of trigonometry in manufacturing. This online training course provides an in-depth study of right triangle trigonometry and its applications to practical manufacturing calculations. The learner studies the foundations of trigonometry, including lines, components and types of angles, and angle measurement. Topics of focus include triangles, the Pythagorean Theorem, understanding and calculating trigonometric ratios and inverse functions, and the components of circles and their relationship to angles.

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| **Segment 1 - Cartesian Coordinate System and Angles**  Objective 1 - Describe the Elements of a 2-D Cartesian Coordinate System  Objective 2 - Describe Lines  Objective 3 - Describe the Elements of an Angle  Objective 4 - Describe How Angles Are Measured  Objective 5 - Describe Five Types of Angles  Objective 6 - Describe How to Convert Angles Measured in Degrees, Minutes and Seconds to Decimal Degrees  **Segment 2 - Triangles and the Pythagorean Theorem**  Objective 7 - Define Trigonometry and Triangle  Objective 8 - Describe Four Common Types of Triangles  Objective 9 - Describe How to Use the Pythagorean Theorem  Objective 10 - Describe How Similar Triangles Are Used in Industry  **Segment 3 - Basic Trigonometry**  Objective 11 - Define Trigonometric Ratios and Explain How to Calculate Sine, Cosine, and Tangent  Objective 12 - Define Reciprocal Ratios and Explain How to Calculate Secant, Cosecant, and Cotangent  Objective 13 - Describe Inverse Trigonometric Functions and Explain How to Calculate Them  **Segment 4 - Circles and Semicircles**  Objective 14 - Describe a Circle and Its Components  Objective 15 - Describe a Semicircle and Its Components  Objective 16 - Describe Relationships between Circles, Angles, and Lines  **Segment 5 - Applications of Trigonometry in Manufacturing**  Objective 17 - Describe How to Use a Sine Plate  Objective 18 - Describe How to Create an Angular Hole Pattern  Objective 19 - Describe How to Create a Circular Bolt Hole Pattern  Objective 20 - Describe How to Calculate the Center Point of a Radius |

**III. Trig for Beginners:**  <https://learn.mindset.africa/sites/default/files/resourcelib/emshare-topic-overview-asset/Maths%2010-1%20A%20Guide%20to%20Trigonometry%20for%20Beginners.pdf>