

North Carolina Technical Mathematics 2 with **CORD Algebra 1 2nd Edition**

Technical Mathematics 2

Technical Mathematics 2 continues students' study of algebra and geometry, building upon middle and high school topics. Geometry, functions, and statistical methods for estimation and prediction are the topics to be studied in an application-centered environment. Appropriate technology, from manipulatives to calculators and application software, should be used regularly for instruction and assessment.

Prerequisites

- Apply geometric properties and relationships to solve problems.
- Use tables, formulas and algebraic expressions to model and solve problems.
- Identify, graph, and use exponential and quadratic functions to solve problems.
- Create linear models, for a set of data, to solve problems.

Geometry and Measurement, Data Analysis and Probability, Algebra

Competency Goal 1: The learner will use properties of geometric figures to solve problems.

1.01 Apply the properties and definitions of lines and angles to model and solve problems.

ST/TE: 249 – 254, 258, 273, 414, 449, 452, 462, 531, 606, 625

1.02 Apply the properties and definitions of plane figures to model and solve problems:

a) Triangles.

ST/TE: 97, 99, 101, 139, 149, 248, 303, 307 - 311, 348, 361, 367, 561, 563, 569, 600, 680 - 686, 688 - 693, 694, 699 - 707, 709 - 716, 726 - 727, 728 - 739, 740 - 741

b) Quadrilaterals.

ST/TE: 88, 90, 96, 97 – 102, 135, 138, 139, 154, 179, 213, 217, 240, 254, 290, 304, 306, 339, 458, 459, 476 – 477, 522, 563, 580, 586 – 589, 615, 617, 646, 655, 665, 667 – 672, 674, 676, 677, 693, 698, 708, 721

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c) Other polygons.
ST/TE: 90, 97, 102, 462, 498

d) Circles.

ST/TE: 87, 103 – 106, 109 – 110, 138 – 139, 141, 143, 179, 185 – 186, 212, 311, 320, 455, 498, 563, 580, 614 – 616, 698

Competency Goal 2: The learner will use relations and functions to solve problems.

2.01 Use quadratic equations to model and solve problems; justify results.

- a) Solve using tables, graphs, and algebraic properties.
- b) Interpret the constants and coefficients in the context of the problem.

ST/TE: 297, 301, 303, 620 – 621, 626 – 632, 633 – 637, 638 – 643, 645 – 648, 649 – 656, 657 – 660, 660 – 662, 662 – 663, 664 – 675, 676 – 677, 708, 716

2.02 Use exponential functions to model and solve problems; justify results.

- a) Solve using tables, graphs, and algebraic properties.
- b) Interpret the constants, coefficients, and bases in the context of the problem.

ST/TE: 95, 96, 143, 312 – 319, 323 – 325, 338, 483, 625

2.03 Create, interpret, and analyze best-fit models of linear, exponential, and quadratic functions to solve problems.

- a) Interpret the constants, coefficients, and bases in the context of the data.
- b) Check the model for goodness-of-fit and use the model, where appropriate, to draw conclusions or make predictions.

ST/TE: 274, 404 – 410, 432, 437, 439, 518

2.04 Use systems of equations and inequalities to model and solve problems using tables, graphs, matrix operations, and algebraic properties; justify results.

ST/TE: 442 – 448, 449 – 454, 456 – 461, 463 – 469, 470 – 475, 476 – 477, 477 – 479, 479 – 480, 481 – 491, 492 – 493, 518, 531, 532 – 536, 548, 554, 569, 580, 585, 592, 600, 606, 625, 632, 644, 698, 708, 716, 721