

Math 140
PreCalculus Algebra and Trigonometry

Text: *Functions Modeling Change*, 4th edition, Connally, Hughes-Hallett, Gleason, et al., Wiley 2011.

Prerequisites: Minimum ACT math score of 23, department exam or Math 100 or Math 105 with a grade of C or better.

A Graphing calculator is required. A TI-83+, TI-84, TI-86, TI-89, or better is strongly recommended.

| Topic | Section | Assignment |
|-------|--------------------------------------|--|
| 1 | 1.1 Functions | S1-S8 / 2,3,5,7,11-14,18 / 20,22,25-28,31-33 |
| 2 | 1.2 Rate of Change | S1-S4,S6-S9 / 4-8,12 / 16,20-25 |
| 3 | 1.3 Linear Functions | S1-S8 / 1,2,4-6,9-12 / 15-18,22,24,27,28,31,32 |
| 4 | 1.4 Formulas for Linear Fns | S3-S8 / 2,5,7,12,14,15,18-20,29,30 / 38,39,42,47,50 |
| 5 | 1.5 Geom. Prop. Of Lin. Fns. | S1-S4, S7-S8 / 2,3,7,10,11 / 17,19,20,24,25,29,32 |
| 6 | 1.6 Fitting Lin. Fns. To Data | 7,9,10,11 |
| 7 | 2.1 Input and Output | S1-S4, S7-S9 / 2,3,6,8-11 / 16-22,25,26,33 |
| 8 | 2.2 Domain and Range | S1-S3,S5-S9 / 4,6,9,11,16-18 / 21-26,29,32,33 |
| 9 | 2.3 Piecewise Defined Fns | S1-S10 / 1,3-5,7,9 / 11-16 |
| 10 | 2.4 Composite and Inverse Fns | S2-S5,S7-S10 / 2-5,15,17,20 / 22,24,25,27,28,30,36,37,39,50 |
| 11 | 3.1 Quadratic Fns | S1-S5,S7-S10 / 2,5,7,10,12,17,18 / 22,24,25,29,30,32,34 |
| 12 | 3.2 Vertex of Parabola | S1-S2,S5-S6,S9-S10 / 1,2,5-7,9,11-14,17 / 23,25,28-31 |
| 13 | REVIEW: Chapter 1 | 6,8,9,19-22 / 25,34,42,46 |
| | REVIEW: Chapter 2 | 10,12,13,18,20,27,28,31,32,40,41,46 / 53,56,58,60,65,68 |
| | REVIEW: Chapter 3 | 5,6,8,9,13-17,19-21 / 23,26,32,33 |
| 14 | TEST 1 | |
| 15 | 4.1 Exponential Fns | S1-S4 / 1,2,4,7,10,12,15,16, / 18,21-23,26,28,30,31,34,48,56,57 |
| 16 | 4.2 Comparing Exp. And Lin. Fns | S1-S4, S7, S10 / 3,4,10,12,13,25 / 31,32,36,39,41,42 |
| 17 | 4.3 Graphs of Exp. Fns | 3,4,11-14,16,17,20-22 / 23-26,31,33,34,37,38,41,43,45 |
| 18 | 4.4 Apps. To Compound Int. | 2,5,9 / 15,16,18-20 |
| 19 | 4.5 The Number e | S1,S2, S7-S11 / 3,5 / 9,11-13,26,30,32,41,42,47-49 |
| 20 | 5.1 Logs and their Properties | S1-S8 / 1,3,7,8,11,12,15,18 / 24,28-31,34,41,43,47-50 |
| 21 | 5.2 Logs and Exponential Models | S5-S10 / 6,8,9,11,14-16 / 21,22,25,27,30,33,40,42,49,51,53,56,57 |
| 22 | 5.3 The Log Function | S3-S6 / 5-10,12 / 20-22,27,34,37,39 |
| 23 | REVIEW: Chapter 4 | 1-6,8,11,14 / 17,27-29,35,37,39,42,53,55,75 |
| | REVIEW: Chapter 5 | 1-4,7,9,11,15,22-24 / 38-40,48-50,53,55,62 |
| 24 | TEST 2 | |
| 25 | 6.1 Vertical and Horizontal Shifts | S9-S10 / 1-4,7-11,14,15,19,22,25, / 27,31-33,38,47-49,52,55 |
| 26 | 6.2 Reflections and Symmetry | S5-S8 / 1-4,11,17,18,21,23-25 / 30,33-36,40,45,46 |
| 27 | 6.3 Vert. Stretches and Compressions | S3-S4 / 1-3,8,12,20 / 21-23,25,26,28-30,35,36,38-40,42,44 |
| 28 | 6.4 Hor. Stretches and Compressions | S1-S4 / 1,2,4,6,7,10 / 12,13,15,16,20-22,25-27 |
| 29 | 7.1 Periodic Fns | 1-4,6-9 / 14,15,17,19-21,23,25-28 |
| 30 | 7.2 Sine and Cosine Fns | 1-10 / 11-14,16,17,19,21-24 |
| 31 | 7.3 Graphs of Sine and Cosine Fns | 1-3,5-7,11-13,15-21 / 23-25,31-34,36,38 |
| 32 | 7.4 Tangent Fn | 1-5,8,9,11,12,15-23 / 24-27,29 |
| 33 | 7.5 Right Triangles, Inverses | 1,3,5,9-13,15-23 / 25,26,29,30,33,36,38-41,43 |
| 34 | 7.6 Non-Right Triangles | 1,2,9,12,14,17,20,23,24,26-28,30,31 / 32,33,35-38,43,44 |
| 35 | REVIEW: Chapter 6 | 3-10,12 / 15,18,19,24,26,30,33,34,36-38 |
| | REVIEW: Chapter 7 | 9,10,11,13,14,16-24 / 31,32,37-41,45,46 |
| 36 | TEST 3 | |

| Topic | Section | Assignment |
|-------|--|---|
| 37 | 8.1 Radians and Arc Length | 1,3,6-15,17-22 / 26,27,29-32,34,37-39,41,45,47,48 |
| 38 | 8.2 Sinusoidal Fns | 1-3,6-8,12-16 / 17,18,21-29,31-33,35,36,38-40,43 |
| 39 | 8-3 Trigonometric Fns | 1-11,13-15,17 / 18,19,22-25,27,28,30-33,37,38 |
| 40 | 8.4 Trigonometric Equations | 3,5,6 / 11,12,15,17-20,23-25,27,30,33-39,41,43-50,52,55 |
| 41 | 8.5 Polar Coordinates | 1-21 / 22-27 |
| 42 | 8.6 Complex Numbers | 7-10,12 |
| 43 | 9.1 Identities, Expressions, Equations | 1,2,4,6-8,18 / 22-24,26,27,31-33,37,39,41,49-51 |
| 44 | 9.2 Sum and Difference Formulas | 5-10 / 18 |
| 45 | REVIEW: Chapter 8 REVIEW: Chapter 9 | 1,2,5,6,8,9,12,17,25-27 / 29,31,33,36,39,40,47,49,63,66,70,71 1-7,9-11 / 15,21,22,24 |
| 46 | TEST 4 | |
| 47 | 10.1 Composition of Fns | 1-3,5,6,9-12,17,18 / 19,21,22,24-26,30,32-37,39,40,43,44,46,49,54,55,57,58,64 |
| 48 | 10.2 Invertibility | 1,4-7,9-11,14,19-21,26-28,30,31 / 36,38-42,47,48,55,59,60 |
| 49 | 10.3 Combinations of Fns | 2,6,7,9-11,14,16,19-21 / 23-25,35-37,42,45 |
| 50 | 11.1 Power Fns | S1-S10 / 1,4,5,9,12,15,17,18,22,25,26 / 38,41-43,46,47 |
| 51 | 11.2 Polynomial Fns | 1,2,4,5,7,8,10 / 11,12,18,20-23,25-27,30,31 |
| 52 | 11.3 Short-Run Behavior of Poly. | 2,3,5,6,8,10 / 12,13,15,17-20,23,26,27,33-35,41 |
| 53 | 11.4 Rational Fns | S1-S4, S9 / 2,3,5,10,11,14,15 / 16,18,19,26 |
| 54 | 11.5 Short-Run Behavior of Rat. Fns | 1-5,7,8 / 11,13-16,22,23,33,36,42,43 |
| 55 | 12.1 Vectors | 2,3,4,9,10,12,14 / 16-20,24 |
| 56 | 12.2 Components of a Vector | 5,6,8,9 / 14,15,17-19,25,26,30,31 |
| 57 | 12.3 Applications of Vectors | 2,4,9,10,12 / 13-15,17,19 |
| 58 | REVIEW: Chapter 10 REVIEW: Chapter 11 REVIEW: Chapter 12 | 2-6,11,13,15,21,23,24,27,28,37 / 51,57-59,67-69,73-76,81 9-13,18-20,29 / 33,35,36,41,42,45,48,49,51,54,55,57,64,65 1,4,5,7,9,10 / 23,28 |
| 59 | TEST 5 | |
| 60 | REVIEW FOR FINAL EXAM | |

Emergency Evacuation Procedure: A map of this floor is posted near the elevator marking the evacuation route and the **Designated Rescue Area**. This is an area where emergency service personnel will go first to look for individuals who need assistance in exiting the building. Students who may need assistance should identify themselves to the teaching faculty.

Last updated 20 August 2011.