

MAC 1147 Book HW Assignments

You should read the textbook sections covered in each day's lecture before class. After each lecture, review your notes and the text to make sure you understand the main ideas prior to working the exercises.

If you have questions about the reading or homework exercises, you may ask your discussion leader in discussion class and during office hours, or you may ask your lecturer before or after lecture and during office hours. Tutoring is also available in the SE Broward math lab.

You should complete each assignment **before** your next lecture class, since the material in each new lecture builds on previous concepts.

L1 Real Numbers, Reading: Student Guide, Appendix A.1

Exercises (A.1), page A11: 6, 7, 9, 12, 16, 17, 19, 25, 27, 35, 39, 40, 43, 50, 53, 55, 61, 65, 72, 73, 80.

L2 Exponents and Radicals, Reading: Appendix A.2

Exercises (A.2), page A23: 1, 4, 6, 7, 8, 13, 14, 19, 20, 26, 29, 41, 44, 50, 52, 56, 58, 60, 62, 64, 65, 72, 74, 75, 78, 81, 84.

Additional HW: Simplify the radical expression: $\sqrt[3]{81x^7y^2} \cdot \sqrt[3]{36x^2y^2}$

L3 Polynomials and Factoring, Reading: Appendix A.3

Exercises (A.3), page A33: 1, 2, 15, 19, 21, 23, 33, 35, 37, 39, 43, 45, 47, 52, 56, 61, 69, 76, 79, 89, 94, 103, 104, 107.

L4 Rational Expressions, Reading: Appendix A.4

Exercises (A.4), page A42: 1, 2, 3, 4, 7, 12, 16, 22, 30, 35, 39, 44, 51, 54, 56, 60, 62, 66, 70, 78, 79, 81, 82.

L5 Solving Equations, Reading: Appendix A.5

Exercises (A.5), page A56: 1, 3, 4, 10, 14, 19, 21, 26, 34, 38, 40, 42, 44, 50, 63, 70, 76, 78, 80, 84, 85, 86, 90, 92, 95, 100.

Additional HW: Find all real solutions and check your answers:

1. $6x^{-2} + x^{-1} = 2$.

2. $8(m-4)^4 - 10(m-4)^2 + 3 = 0$.

3. $(y+3)^{\frac{2}{3}} - 2(y+3)^{\frac{1}{3}} - 3 = 0$.

4. $4(x+1)^{\frac{1}{2}} - 5(x+1)^{\frac{3}{2}} + (x+1)^{\frac{5}{2}} = 0$.

5. $\frac{1}{x-3} + \frac{3}{x+3} = \frac{6x}{x^2-9}$.

6. $\frac{x^2-9}{x^2-2x-3} = \frac{3}{2}$.

7. $x^8 - 4x^4 - 5 = 0$

8. $3x^4 + 10x^2 - 25 = 0$.

9. $\sqrt{x+7} + 3 = \sqrt{x-4}$.

10. $2x = 1 - \sqrt{2-x}$ More on the next page.

11. $x = \sqrt{15-2x}$

12. $(5x^2 - 6)^{\frac{1}{4}} = x$

13. $\sqrt[3]{4x+3} = \sqrt[3]{2x-1}$

14. $(2x-1)^{\frac{2}{3}} = x^{\frac{1}{3}}$

15. $\sqrt{x} - (3)\sqrt[4]{x} - 4 = 0$

16. $x^{\frac{1}{2}} + 3x^{-\frac{1}{2}} = 10x^{-\frac{3}{2}}$

17. Factor $x^6 - 2x^4 + x^2$ completely and find all the real solutions of the equation

$$x^6 - 2x^4 + x^2 = 0.$$

L6 Linear Inequalities and Algebraic Errors, Reading: Appendices A.6 and A.7

Exercises (A.6), page A64: 4, 7, 9, 15, 28, 38, 40, 53, 54, 58, 69, 76, 78, 81, 82, 83, 85, 87, 89, 91, 94, 95, 98, 102, 103, 109.

Exercises (A.7), page A2: 15, 16, 22, 26, 31, 33, 43, 49, 55, 64, 67, 72.

L7 Rectangular Coordinates and Graphs, Reading: Sections 1.1 and 1.2

Exercises (1.1), page 8: 1, 2, 3, 4, 14, 24, 32, 45, 51, 54, 56, 58.

Exercises (1.2), page 19: 3, 4, 5, 10, 26, 28, 29, 31, 34, 38, 43, 47, 48, 71, 74, 76, 79, 90.

Additional HW:

1. Find the equation of a circle in standard form with center at the point $(-3,2)$ and tangent to the line (touching the line) $y = 4$.

2. Given the circle $x^2 + (y + 1)^2 - 1 = 8$, find its center, radius and intercepts.

(Hint: Sketch the graph.)

L8 Linear Equations and Functions, Reading: Sections 1.3 and 1.4

Exercises (1.3), page 31: 1, 2, 3, 4, 5, 6, 9, 11, 14, 19, 23, 30, 39, 45, 51, 53, 55, 65, 67, 70, 74, 87, 89, 90, 91, 93, 94, 96, 99, 101, 102, 103, 104, 105, 112.

Exercises (1.4), page 44: 1, 2, 4, 7, 11, 12, 24, 29, 32, 36, 40, 47, 48, 57, 58, 59, 61, 63, 64, 68, 71, 73, 78, 82, 85, 86, 88, 89, 90, 93, 97.

L9 Analyzing Graphs of Functions, Reading: Section 1.5

Exercises (1.5), page 56: 1, 2, 3, 4, 5, 6, 7, 9, 11, 13, 18, 20, 23, 33, 37, 55, 56, 64, 66, 71, 72, 73, 83, 85, 88a, 93, 94, 95, 96, 98.

L10 A Library of Functions and Transformations of Functions, Reading: Sections 1.6 and 1.7

Exercises (1.6), page 65: 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 35, 36, 39, 43, 48, 49, 50.

Exercises (1.7), page 72: 1, 2, 3, 4, 5, 9, 11, 13, 14, 15, 16, 17, 19, 20, 21, 23, 25, 27, 29, 31, 33, 39, 47, 50, 51, 53, 55, 57, 71, 73, 74, 75, 76, 78, 80.

L11 Combinations of Functions, Reading: Section 1.8

Exercises (1.8), page 81: 3, 9, 13, 17, 18, 23, 25, 31, 34, 35, 37, 42, 43, 45, 51, 55, 59, 60, 61.

L12 Inverse Functions, Reading: Section 1.9

Exercises (1.9), page 90: 1, 2, 3, 4, 5, 6, 14, 19, 21, 27, 29, 33, 35, 37, 39, 45, 49, 50, 57, 61, 63, 64, 65, 70, 73, 76, 79, 84, 86, 88, 92, 93, 95, 96, 97, 101.

L13 Quadratic Functions , Reading: Section 2.1

Exercises (2.1), page 120: 3, 5, 6, 7, 9, 11, 15, 22, 32, 43, 44, 48, 50, 58, 68, 74, 75, 76, 77, 80, 83, 87, 88, 89, 90, 92.

L14 Polynomial Functions of Higher Degree and Division of Polynomials, Reading: Sections 2.2 and 2.3

Exercises (2.2), page 133: 1, 2, 3, 4, 5, 7, 9, 10, 11, 12, 13, 14, 15, 17, 19, 21, 23, 27, 29, 61, 63, 65, 69, 71, 76, 78, 80, 82, 85, 87, 97a, b, 100a, b, 105, 107, 108, 109, 110, 111, 112, 113, 115.

Exercises (2.3), page 144: 2, 3, 4, 5, 6, 8, 12, 24, 34, 38, 48, 55, 60, 67, 68, 84, 87, 90, 92, 95, 97.

L15 Complex Numbers , Reading: Section 2.4

Exercises (2.4), page 152: 1, 2, 3, 4, 5, 6, 7, 9, 13, 17, 19, 25, 27, 36, 38, 42, 45, 47, 49, 51, 56, 60, 64, 65, 67, 69, 72, 81, 85, 87, 93, 94, 96, 97, 99.

L16 Zeros of Polynomial Functions, Reading: Sections 2.5 and 2.6

Exercises (2.5), page 164: 2, 3, 4, 5, 6, 9, 11, 13, 15, 17, 20, 26, 30, 33, 46, 48, 50, 52, 56, 62, 63, 78, 99, 104, 113, 115, 116, 117, 118, 119, 120, 121, 122, 123, 128, 130, 131.

Exercises (2.6), page 177: 2, 3, 7.

L17 Rational Functions , Reading: Section 2.6

Exercises (2.6), page 177: 10, 13, 15, 21, 28, 29, 31, 34, 35, 38, 41, 42, 43, 44, 67, 73 a, b, 78, 80, 81, 82.

L18 Nonlinear Inequalities , Reading: Section 2.7

Exercises (2.7), page 187: 1, 2, 3, 4, 7, 13, 15, 24, 28, 30, 35, 36, 37, 38, 46, 52, 53, 66, 74, 76, 78, 90.

L19 Linear and Nonlinear Systems of Equations, Reading: Sections 7.1 and 7.2

Exercises (7.1), page 473: 3, 4, 8, 10, 12, 14, 16, 20, 23, 26, 30, 32, 38, 42, 56, 59, 66, 70, 71, 72.

Exercises (7.2), page 484: 12, 16, 21, 22, 30, 31, 32, 33, 34, 42, 44, 49 a, c, 52, 62.

L20 Exponential Functions, Reading: Section 3.1

Exercises (3.1): page 208: 5, 6, 13, 14, 15, 16, 17-22 all without a calculator, 23-26 all, 39-44 all without a calculator, 52, 54, 57 use calculator, 63 use calc., 65 use calc., 72, 73, 74, 76, 78, 79, 84, 85.

L21 Logarithmic Functions, Reading: Section 3.2

Exercises (3.2), page 218: 1-7 all, 9, 11, 13, 15, 17, 19, 25-28 all, 30, 32, 33, 37-40 all, 43, 45, 46, 48, 49, 52, 53, 56, 61, 63, 66, 68, 74, 76, 82, 83, 84, 88.

L22 Properties of Logarithms, Reading: Section 3.3

Exercises (3.3), page 225: 4, 5, 6, 7, 15, 16, 18, 19, 21-37 all, 39, 41, 42, 43, 45, 49, 52, 54, 56, 57, 59, 60, 62, 64, 68, 73, 74, 75, 76, 78, 80, 84.

L23 Exponential and Logarithmic Equations, Reading: Section 3.4

Exercises (3.4), page 235: 1, 3, 5, 7-17 all, 20, 22, 24, 26, 32, 36-62 even, 72-82 even, 87-90 all.

L24 Exponential and Logarithmic Models, Reading: Section 3.5

Exercises (3.5), page 245: 1, 5, 8, 10, 14, 16, 21, 24, 26, 33, 34, 36, 44, 57.

L25 Radian and Degree Measure, Reading: Section 4.1

Exercises (4.1), page 269: 1-7 all, 9, 12, 14, 16, 17-31 odd, 35, 38, 39, 42, 44, 52, 54, 55, 56, 57, 61, 62, 64, 66, 69-73 all.

L26 Trigonometric Functions and the Unit Circle, Reading: Section 4.2

Exercises (4.2), page 277: 1-5 all, 8, 9-13 all, 18, 19, 20, 22, 23, 29, 32, 33, 35, 36, 38, 40, 49, 53, 54, 60, 61.

L27 Right Triangle Trigonometry and Trigonometric Functions of Any Angle

Reading: Sections 4.3 and 4.4

Exercises (4.3), page 286: 1-5 all, 7, 11, 21, 23, 25, 27, 29, 43, 44, 50, 52, 54, 56, 57, 59, 61, 63, 64, 66, 67, 68, 69, 70, 71, 72, 77, 78-85 all, 88.

Exercises (4.4), page 296: 1-9 all, 11, 19, 20, 21, 22, 24, 28, 30, 31, 34, 36, 37, 39, 41, 43, 46, 48, 49, 51, 55, 56, 63, 66, 68, 70, 74, 91, 96, 97, 103, 106.

L28 Graphs of Sine and Cosine Functions, Reading: Section 4.5

Exercises (4.5), page 306: 1-5 all, 7, 18, 19, 21, 23, 25, 27, 29, 32, 35, 37, 43, 44, 48, 59, 61, 73, 76, 80, 83, 86, 88, 97, 102.

L29 Graphs of Other Trigonometric Functions, Reading: Section 4.6

Exercises (4.6), page 317: 1, 2, 3, 5-14 all, 17, 21, 24, 28, 34, 37, 49, 62, 63, 85, 86, 87, 92.

L30 Inverse Trigonometric Functions, Reading: Section 4.7

Exercises (4.7), page 326: 1, 2, 3, 4, 5-17 odd, 19 no calc, 20 no calc, 39, 40, 42, 46, 47-52 all, 54, 56, 58, 66, 70, 72, 74, 78, 80, 81, 83, 86, 97-102 all, 104a, 104b use calc, 108a, 108b use calc, 110-114 all.

L31 Applications, Reading: Section 4.8

Exercises (4.8), page 336: 1, 16, 20, 22, 24, 26, 29, 33, 34, 36, 37, 40, 42, 46.

L32 Using Fundamental Identities, Reading: Section 5.1

Exercises (5.1), page 355: 1-6 all, 8, 9, 10, 14, 15-20 all, 21-45 odd, 49, 53, 56, 57, 61, 63, 69, 71.

L33 Verifying Trigonometric Identities, Reading: Section 5.2

Exercises (5.2), page 362: 1-8 all, 13, 16, 19, 27, 29, 33, 39, 41, 47, 59, 61, 64, 67, 68, 69, 71.

L34 Solving Trigonometric Equations, Reading: Section 5.3

Exercises (5.3), page 371: 3, 4, 5, 9, 11, 13, 17, 19, 23, 27-45 odd, 63, 65, 73, 85, 87.

L35 Sum and Difference Formulas, Reading: Section 5.4

Exercises (5.4), page 379: 1-7 all, 9, 11, 17, 27-41 odd, 45, 47, 53, 57, 63, 65, 69, 73, 81-84 all, 86.

L36 Multiple-Angle and Product-to-Sum Formulas, Reading: Section 5.5

Exercises (5.5), page 389: 1-7 all, 9-27 odd, 33, 37, 41, 45, 65, 68, 69.
