

Textbook: Thomas, Weir, Hass, *Thomas' Calculus, Early Transcendentals*, 12th edition (2010)

Course Webpage: <http://www.math.purdue.edu/MA173>

Supplementary Problems are available on the course webpage. These problems are mandatory, not optional.

NOTE: Your instructor may make changes to these assignments, so please check with your instructor to be sure that you do the correct problems at the correct time.

Lesson	Read	Solve
1	- In §1.5, read from the beginning to p.38 (skip “Exponential growth and decay”). - In §3.5, read the table on p.158. - Read §3.6.	- §1.5, p.39 # 4, 14, 15; - §3.6, p.167 # 35, 45, 49, 50, 52, 57, 63. <i>Note</i> ¹
2	- In §1.6, read from the beginning to the end of Example 5. - In §3.8, read from the beginning of the section to the end of Example 3.	- §1.6, p.51 # 39(d), 43(c), 51; - §3.6, p.168 # 62, 66, 74, 87(e); - §3.8, p.184 # 29, 32, 40.
3	- In §5.1, read pp.297–301.	- §1.6, p.51 # 41(c), 53(b), 57; - §3.6, p.168 # 78, 88(deg); - §5.1, p.305 # 9(b), 11(b), 12(a)
4	- In §5.2, read from the beginning of the section to the end of Example 2.	- §3.6, p.168 # 89, 90; - §5.1, p.305 # 10(b), 12(b); - §5.2, p.312 # 1, 2, 9 ² , 10 ² .
5	- In §5.3, read the bottom of p.314 and items 1–5 in the table on p.317. - In §5.4, read “Fundamental Theorem, Part 1” on pp.326–327.	- §5.2, p.313 ³ # 11, 12; - §5.3, p.322 # 10 ⁴ ; - Supplementary Problems: A .
6	- In §5.4, read from the bottom of p.328 to the end of the section.	- §5.3, p.322 # 13(b), 14(a); - §5.4, p.333 # 20, 23, 39(ab) ⁵ , 40(ab) ⁵ , 57, 58.
7	- Read §5.5, but skip Examples 6 and 10.	- §5.4, p.334 # 59, 83(abc); - §5.5, p.343 # 6, 20, 24, 29, 36, 40; - Supplementary Problems: B .
8	- Read §5.6.	- §5.4, p.335 # 83(de); - §5.5, p.343 # 55, 71 ⁶ ; - §5.6, p.350 # 16, 17, 23 ⁷ , 57, 58, 59, 60, 64.

¹ You have to show your work to get full credit, but for this and the next assignment it's OK to do the problems in one step.

² Explain why your answer is right.

³ Write each of these sums in Σ notation in *three different ways*; see Problem 7 on p.312 for a hint.

⁴ The instruction for this problem begins with “Suppose that f and h are integrable.” You can ignore this phrase, here and everywhere else in this course.

⁵ See Example 2(c) for a hint.

⁶ See Example 5 on p.282.

⁷ See Example 9 on p.341.

Lesson	Read	Solve
9	- In §6.1, read from p.366 to the end of Example 8.	- §5.5, p.343 # 77, 78; - §5.6, p.350 # 25, 28, 66, 67, 112 ⁸ ; - §6.1, p.372 # 15, 22, 29, 30.
10	- In §6.1, read from the beginning of the section to the end of Example 1, and also from p.369 to the end of the section.	- §5.6, p.350 # 32, 36; - §5.6, p.353 # 113(b) ⁹ ; - §6.1, p.372 # 37, 41, 42, 44, 51(ad), 52(a), 53(c).
11	- Read §6.2, but skip Example 3.	- §6.2, p.379 # 1, 2, 5, 6, 7, 9, 10, 11.
12	- In §6.3, read to the end of Example 4.	- §6.2, p.380 # 29(ab) ¹⁰ , 40; - §6.3, p.386 # 1, 2, 10, 15, 17, 22.
13	- Read §6.5 to the end of Example 5, skip Example 2.	- §6.3, p.386 # 16, 21; - §6.5, p.398 # 1, 2(ab), 7, 8, 11, 13(a), 14(a).
14	- Read §7.2, but skip separable differential equations. - Optional reading in §7.1: from the beginning of the section to the middle of p.419	- §6.5, p.399 # 12, 19, 21, 22; - §7.2, p.434 # 25, 26, 30, 35.
15	- In §4.5, read to the end of Example 8.	- §4.5, p.261 # 14, 16, 19, 24, 25, 43, 45, 46; - §7.2, p.434 # 27, 36.
16	- In §7.4, read from the beginning of the section to the end of Example 1. - In §1.6, reread pp.40–43.	- §1.6, p.51 # 19, 22; - §4.5, p.261 # 21, 23, 76; - §7.4, p.448 # 2(afh), 5(e), 7 ¹¹ .
17	- In §1.6, read from the bottom of p.46 to the end of the section (but only read about the inverse sine, ignore the inverse cosine). - In §3.8, read from the beginning of the section to the end of Example 2.	- §1.6, p.52 # 65(abc), 68(ab); - §3.8, p.184 # 7, 8, 9, 10; - §7.4, p.448 # 8 ¹¹ .
18	- Read §3.9 (but only read about the inverse sine and inverse tangent, IGNORE the inverse cosine, inverse cotangent, inverse secant, and inverse cosecant).	- §3.9, p.191 # 9, 10, 12, 30, 34, 41; - Supplementary Problems: C.
19	- In §8.1, read pp.454–457. Also overview p.453.	- §8.1, p.459 ¹² # 3, 5, 6, 11, 12, 13, 14, 20, 22, 23.
20	- Read §8.2, (but skip Example 4).	- §8.1, p.460 # 10, 29; - §8.2, p.466 # 8, 17, 20, 22, 41, 45; - Supplementary Problems: D.

⁸Substitute $u = 1 - x$.

⁹Substitute $u = -x$.

¹⁰Revolve around the y -axis only.

¹¹Be sure to justify your answer.

¹²Do not use integral tables for any of these problems.

Lesson	Read	Solve
21	- Read §8.3.	- §8.1, p.459 # 25; - §8.2, p.466 # 46; - §8.3, p.470 ¹³ # 2, 7, 8, 10, 17, 18, 23, 24
22	- In §8.4, read Examples 1, 9, 2, 3, 6, 7 (in that order).	- §8.3, p.470 # 12, 26; - §8.4, p.479 # 11, 12, 15, 16, 17, 20, 34.
23	- In §8.7, read from the beginning of the section to the end of Example 3.	- §8.3, p.470 # 25, 30; - §8.4, p.479 # 10, 36; - §8.7, p.505 # 11, 12, 13, 17; - Supplementary Problems: E .
24	- In §10.1, read from the beginning of the section to the top of p.552, and from the bottom of p.553 to the end of Example 6.	- §8.4, p.479 # 14; - §8.7, p.505 # 2; - §10.1, p.559 # 4, 16, 20, 31, 32, 37, 39, 41.
25	- In §10.2, read from the beginning of the section to the end of Example 4. Also read Examples 8, 9, 10.	- §10.1, p.559 # 38, 42, 45, 51; - §10.2, p.569 # 2, 8, 9, 19, 20, 51.
26	- In §10.3, read to the end of Example 4 (including the proof of Theorem 9).	- §10.1, p.559 ¹⁴ # 46, 52, 60; - §10.2, p.569 # 14, 55, 90; - Supplementary Problems: F .
27	- In §10.4, read to the end of Example 2(b).	- §10.2, p.570 # 93; - §10.4, p.580 # 18, 22, 23, 26, 33.
28	- In §10.5, read from the beginning of the section to the end of Example 1.	- §10.4, p.580 # 24, 34; - §10.5, p.585 # 18, 19, 20, 21, 33, 34, 37.
29	- In §10.6, read from the beginning of the section to the end of Example 5; you may skip Example 2.	- §10.6, p.591 # 2, 4, 10, 15, 17, 19, 23, 27, 49, 51.
30	- In §10.7, read from the beginning of the section to the end of Example 3 (but ignore the discussions of convergence at the endpoints of the interval of convergence).	- §10.7, p.600 ¹⁵ # 6, 7, 11, 13, 19; - §10.8, p.606 ^{14,16} # 11, 13, 15.
31	- In §10.8, read from the beginning of the section to the end of Example 3. - In §10.9, read Example 4 and the paragraph before Example 5.	- §10.7, p.600 ¹⁵ # 3, 8, 12, 28; - §10.8, p.606 # 3, 7, 27, 29; - §10.9, p.613 # 12, 15.

¹³Do not use integral tables for these but you may use the formula for the integral of $\sec x$ on the p.453.

¹⁴Explain your answers.

¹⁵Just do part (a), that is, just give the radius and open interval of convergence.

¹⁶This lesson has some homework from §10.8, but you don't need to read §10.8 to do these problems.

Lesson	Read	Solve
32	- In §10.10, read Examples 5 and 6 on pp.618–619. - In Appendix A.7 read from the middle of p.AP-27 to the middle of p.AP-30.	- §10.7, p.600 # 27; - §10.8, p.606 # 24; - §10.9, p.613 # 14, 16; - §10.10, p.621 ¹⁷ # 29, 30, 37; - §A.7, p.AP-34 # 2(ab).
33	- In §10.10, read about “Euler’s identity” from the bottom of p.619 to the end of the section. - In Appendix A.7, read from the middle of p.AP-30 to the end of Example 3.	- §10.10, p.621 # 32 ¹⁷ , 67(abc), 68, 72; - §A.7, p.AP-34 # 2(c), 11, 13.
34	- In §11.1, read from the beginning of the section to the end of Example 8. (The rest of the section is optional).	- §11.1, p.634 # 2, 6, 16, 8, 20(a) ¹⁸ , 22; - §A.7, p.AP-34 ¹⁹ # 12, 14.
35	- In §11.2 read to the end of Example 5, but skip the second derivatives.	- §11.1, p.634 # 14, 23; - §11.2, p.643 # 4 ²⁰ , 8 ²⁰ , 21, 26.
36	- Read §11.3.	- §11.2, p.643 # 29, 30; - §11.3, p.648 # 2, 6(deh), 16, 36, 38, 39.
37	- Read §11.4, but ignore the statements about symmetry.	- §11.2, p.643 # 22, 27; - §11.3, p.649 # 49, 50; - §11.4, p.652 # 4 ²¹ , 6 ²¹ , 18, 19, 28.
38	- Read §11.5.	- §11.4, p.652 # 10, 12, 20; - §11.5, p.656 # 4, 5, 19, 25; - Ch.11 Practice Exer., p.674 # 48, 53.
39	- In §11.6, review the equations for parabolas, ellipses and hyperbolas. You will not need to know about the focus and directrix of a parabola, or about the foci of an ellipse or hyperbola.	- §11.5, p.656 # 9, 28; - §11.6, p.663 ²² # 5, 6, 20, 22, 28, 30.

¹⁷Use power series for these, not l’Hôpital’s rule; see Examples 5 and 6.

¹⁸See the solution of #19(a).

¹⁹Do not draw Argand diagrams.

²⁰Only find the equation for the tangent line, don’t find the second derivative.

²¹Just draw the graph, don’t discuss symmetry.

²²In the last four problems, just give the sketches, and include the asymptotes for the hyperbolas. You do not have to include the foci.