MATH 172 Suggested Homework Problems

TEXT: **Calculus, Third Edition** — James Stewart, Brooks/Cole Publishing, 1995

Students: You are expected to do all of these problems to prepare for the common exams. Where indicated, you should use Maple to help do$^{\mathrm{M}}$ the entire problem, to do the plots$^{\mathrm{P}}$ or to check$\checkmark$ the problems. To study for the exams, do the indicated problems from the review sections. Where you have difficulty, you should go back to the appropriate section and try some more problems.

$^{\mathrm{M}}$ = DO USING MAPLE
$^{\mathrm{P}}$ = DO THE PLOTS USING MAPLE
$\checkmark$ = CHECK USING MAPLE

Chapter 6. Inverse Functions

Ch. 6 Review of §§6.1-6.4 (p. 430) # 1, 3-10, 15, 19, 23, 32$\checkmark$, 35, 41, 47, 49, 67, 71, 73, 78$\checkmark$, 101$\checkmark$, 114$\checkmark$, 118$\checkmark$, 123, 124$\checkmark$, 129, 137, 140$\checkmark$, 142

§6.5 (p. 402) # 1$^{\mathrm{P}}$, 3$^{\mathrm{P}}$, 7, 9, 11, 13, 15, 16$^{\mathrm{P}}$, 17, 19, 21

§6.6 (p. 411) # 11, 13, 16$\checkmark$, 19, 22$\checkmark$, 25, 27, 31, 34$\checkmark$, 38$\checkmark$, 43, 51, 56, 61, 64$\checkmark$, 65, 67, 78$\checkmark$, 81, 83, 87, 89, 96$\checkmark$, 100

§6.7 (p. 418) # 1, 3, 6$\checkmark$, 9, 11, 16, 23, 27, 32$\checkmark$, 33, 37, 41, 44$\checkmark$, 49, 54$\checkmark$, 57, 58$^{\mathrm{P}}$, 61

§6.8 (p. 427) # 3, 6$\checkmark$, 10$\checkmark$, 11, 15, 18$\checkmark$, 21, 25, 28$\checkmark$, 33, 37, 40$\checkmark$, 44$\checkmark$, 45, 51, 53, 58$\checkmark$, 59, 65, 73$\checkmark$, 78$\checkmark$, 81$\checkmark$, 90$\checkmark$(Use `subs(x=a*X,y)`), 95, 97, 99

Ch. 6 Problems Plus (p. 433) # 1, 8, 13

Ch. 6 Review (p. 430) # 2, 11, 12, 13, 25, 40$\checkmark$, 53, 59, 66, 74$\checkmark$, 84$\checkmark$, 86$\checkmark$, 89, 92$\checkmark$, 95, 98$\checkmark$, 106, 126$\checkmark$, 133, 143, 147, 151

Chapter 7. Techniques of Integration

§7.1 (p. 441) # 3, 5, 11, 14$\checkmark$, 17, 21, 24$\checkmark$, 27, 28$\checkmark$, 33, 41, 47, 49$^{\mathrm{P}}$, 53

§7.2 (p. 448) # 1, 3, 5, 14$\checkmark$, 17, 23, 25, 37, 39, 43, 48, 49, 51$^{\mathrm{P}}$, 55, 58

§7.3 (p. 454) # 3, 4$\checkmark$, 7, 11, 14$\checkmark$, 17, 21, 25, 27, 30$\checkmark$, 33$^{\mathrm{P}}$, 36

§7.4 (p. 463) # 1, 3, 6$\checkmark$, 9, 13, 17, 19$\checkmark$, 25, 39, 40$\checkmark$, 43, 47$\checkmark$, 48$\checkmark$, 67$^{\mathrm{M}}$

§7.8 (p. 485) # 1, 3, 7, 15, 21, 22, 23$^{\mathrm{M}}$, 27$^{\mathrm{M}}$, 31, 34

§7.9 (p. 494) # 1, 2$^{\mathrm{M}}$, 3, 4$\checkmark$, 12$\checkmark$, 13, 18$\checkmark$, 19, 21, 27, 29, 33, 35, 37, 41, 45$^{\mathrm{M}}$, 49, 50$\checkmark$, 55, 58, 63, 66$\checkmark$, 73

Ch. 7 Review (p. 497) # 1-4, 6$\checkmark$, 10$\checkmark$, 11, 12$\checkmark$, 14$\checkmark$, 15, 19, 22$\checkmark$, 27, 29, 37, 40$\checkmark$, 41, 43, 44, 47, 49, 51, 54$\checkmark$, 55, 60$\checkmark$, 69, 71, 73, 75, 85

Chapter 8. Further Applications of Integration

§8.1 (p. 511) # 1, 5, 6✓, 7, 9, 12✓, 17, 20^{P}, 21^{M}, 23, 27^{M}, 29, 33, 34, 36, 38^{M}, 43, 44
§15.1 (p. 975) # 10^{M}, 11, 12✓, 13, 14✓, 15, 23^{M}, 25^{M}, 31, 32, 33, 38✓, 41^{P}, 43^{P}, 45
§15.2 (p. 981) # 1, 2, 3, 4, 6✓, 9, 11, 13, 15, 19, 20✓, 23, 28^{P}, 31, 33
§8.2 (p. 518) # 1, 2, 4✓, 5, 8✓, 9, 13, 17, 19, 21^{M}, 23^{M}, 25^{M}, 30✓, 32✓, 33^{M}, 34^{M}
§8.3 (p. 524) # 1, 5, 9, 10✓, 13, 14✓, 18^{M}, 20✓, 21✓, 23
§8.4 (p. 531) # 3, 9, 12✓, 15, 17, 18✓, 22, 23, 26, 27
§8.5 (p. 534) # 1, 3, 4, 11, 13, 16, 17
Ch. 8 Review (p. 541) # 1, 4^{P}✓, 5, 7(Do 2 ways.), 9, 15, 18, 21, 26
Ch. 15 Review (p. 1014) # 1, 2, 4, 5, 11, 12✓, 14✓, 15, 17, 18✓, 29^{M}, 31, 32✓, 38^{P}, 39

Chapter 10. Infinite Sequences and Series

§10.1 (p. 606) # 3, 6✓, 7, 10, 15, 18✓, 21, 25^{P}, 28✓, 29, 32✓, 33, 37, 39, 41^{P}, 43, 45, 49, 52, 53, 55, 56, 59, 61, 64
§10.2 (p. 616) (✓using `Sum` and `value`.)# 3^{P}, 5^{P}, 9, 12✓, 13, 17, 19, 20✓, 21, 25, 28✓, 29, 31, 35, 39, 43, 44, 49^{M}, 51, 53, 55, 60
§10.3 (p. 623) # 3, 4✓, 5, 6✓, 9, 11, 13, 15, 18✓, 19, 21, 25^{M}, 26^{M}, 29, 30^{M}
§10.4 (p. 628) #3, 6, 8, 10, 13, 15, 18, 21, 22, 23, 24, 27, 28, 29, 30, 31, 34, 39, 45
§10.5 (p. 633) # 1, 4, 7, 9, 12, 15, 16, 17, 18, 21, 22, 25, 28✓, 31, 33
§10.6 (p. 639) # 1, 2, 5, 8, 11, 13, 14, 16, 17, 19, 23, 24, 25, 27, 30, 33, 34, 37
§10.7 (p. 642) # 1, 4, 5, 7, 10, 13, 16, 19, 22, 25, 26, 27, 29, 31, 35, 39, 40
§10.8 (p. 647) # 1, 3, 6✓, 7, 9, 10✓, 13, 15, 16✓, 19, 20✓, 23, 24✓(Use `Product` in the denominator.), 27, 30^{P}, 32^{M}, 33
§10.9 (p. 652) (✓using `Sum` and `value`.)# 2✓, 5, 9, 12✓, 13, 16✓, 19^{P}, 21, 24, 25^{M}, 26^{M}, 33, 35, 36✓
§10.10 (p. 663) # 3, 6✓, 7, 11, 12✓, 14, 16, 19, 20, 23, 25, 29^{P}, 30^{P}, 33, 37^{M}, 41✓(Use `taylor`.), 45, 47, 50✓, 53, 54✓
§10.12 (p. 673) # 2^{P}, 5^{P}, 7^{P}, 9^{P}, 12^{M}(Use `taylor`.), 17^{P}, 19^{P}, 22^{P}, 25, 26, 27✓, 29, 30^{P}, 33
Ch. 10 Review (p. 675) # 1, 3, 5, 7, 8✓, 11, 12, 13, 14, 15, 16, 19, 22✓, 24✓, 25, 27, 29, 32✓, 33, 34✓, 36✓, 39, 41, 42✓, 45, 47, 50, 51, 52, 56, 58, 59, 62, 63, 66, 71, 73^{P}, 75, 76

Chapter 9. Parametric Equations and Polar Coordinates Sketching

§9.1 (p. 551) # 1, 4✓, 7, 9✓, 11, 14✓, 15, 18✓, 21, 23, 26✓, 27, 28, 31, 33^{P}, 34^{P}, 37^{M}, 39^{M}
§9.2 (p. 558) # 3, 4^{P}, 5, 7^{P}, 10✓, 13, 16✓, 19^{P}, 22^{M}, 23, 26✓, 29, 32✓, 35^{M}, 39, 40
§9.3 (p. 563) # 2, 5, 8✓, 9^{P}, 14✓, 16✓, 17^{M}, 22✓, 23, 24^{P}, 25, 27
§9.4 (p. 572) # 3, 8✓, 14✓, 15, 17, 18, 21, 25, 28, 29, 34, 35, 39✓, 42✓, 43, 46✓, 49, 50✓, 53, 56✓, 59✓, 62✓, 65, 68^{P}, 71, 74^{P}, 77, 78✓, 80^{P}, 81^{P}, 83^{P}, 85^{P}
§9.5 (p. 578) # 1, 3, 4✓, 8✓, 9, 12✓, 16^{P}, 19^{P}, 23^{P}, 26^{P}, 29^{P}, 30^{P}, 33, 35^{P}, 36^{P}, 39^{P}, 41^{M}, 43, 44✓, 46✓, 47, 53
Ch. 9 Review (p. 591) # 2✓, 3, 5, 8✓, 11, 14, 15, 17, 20, 23, 24✓, 27, 30^{P}, 31^{P}, 33, 36✓, 37, 39^{M}