

Math 103 – Intermediate Algebra
Test 3 Review Sheet
Winter 2023

Test 3 covers Sections 7.3-7.5, Chapter 8, and Sections 9.1-9.4

Expressions

Radical Expressions and Rational Exponents

- Know how to simplify expressions with roots. (Section 8.1)
- Know how to simplify radical expressions. (Section 8.2)
- Be able to rewrite a radical expression using rational exponents and vice versa. (Section 8.3)
- Be able to simplify an expression containing rational exponents. (Section 8.3)
(For a summary of the properties of exponents refer to page 800.)
- Be able to add and subtract radical expressions. (Section 8.4)
- Be able to multiply radical expressions and simplify. (Section 8.4)
- Be able to divide radical expressions. (Section 8.5)
- Know how to rationalize a one-term denominator of a radical expression and simplify. (Section 8.5)
- Know how to rationalize a two-term denominator of a radical expression and simplify. (Section 8.5)
- Know how to evaluate the square root of a negative number. (Section 8.8)
- Know how to write a complex number in standard form. (Section 8.8)
- Be able to add and subtract complex numbers (Section 8.8)
- Be able to multiply complex numbers (Section 8.8)

Rational Expressions

- Be able to simplify a complex rational expression. (Section 7.3)

Equations

Radical Equations

- Know how to solve a radical equation that contains one or more radicals. (Section 8.6)
- Know how to check for extraneous solutions when solving a radical equation. (Section 8.6)

Quadratic Equations

- Know how to solve a quadratic equation using the Square Root Property. (Section 9.1)
- Know how to solve a quadratic equation by completing the square. (Section 9.2)
- Know the quadratic formula and how to solve a quadratic equation using the quadratic formula. (Section 9.3)
- Know how to use the discriminant to determine the type of solutions to a quadratic equation. (Section 9.3)
- Be able to solve an equation of quadratic form. (Section 9.4)

Rational Equations

- Be able to solve rational equations and check for extraneous solutions. (Section 7.4)
- Know how to solve a proportion. (Section 7.5)

Applications

- Be able to solve applications involving variation: direct and inverse. (Section 7.5)
- Be able to solve applications that involve setting up and solving a rational equation. (Section 7.5)

Review Problems

Chapter 7 Review (pg 751): 427, 429, 431, 433, 435, 437, 439, 447, 449, 451, 457, 459, 461, 463, 465, 467, 469, 471

Chapter 8 Review (pg 875): 481, 483, 487, 489, 491, 493, 495, 497, 499, 501, 503, 505, 507, 509, 511, 513, 515, 517, 519, 521, 523, 525, 527, 529, 531, 533, 535, 537, 539, 541, 543, 545, 547, 549, 565, 567, 569, 571, 573

Chapter 9 Review (pg 1008): 395, 397, 399, 401, 403, 407, 409, 417, 419, 423, 425, 427, 429, 431, 433, 435, 441, 443, 445, 447, 449, 451, 453, 455, 457, 459, 461, 463