

Math 98 Practice Problems for Exam #2

Exam #1 will cover sections 10.6, 10.7, 11.1-11.5. You can use a notesheet (8.5×11 , both sides, handwritten) during the exam. A calculator will be provided on the exam.

Here are **some** problems from previous exams. Be sure to also look at previous homework problems and worksheets.

1. Review at the end of chapter 10 (Pgs. 698-701): 103-112, 115-118, 126-128, 130-136
Review at the end of chapter 11 (Pgs. 790-792): 1-6, 8-28, 30, 35-43

2. Solve the following equations.

(a) $2\sqrt[3]{3x+1} + 4 = 0$

(b) $\sqrt{5+t} = t + 3$

(c) $\frac{3}{x} + 4 = \frac{1}{x+2}$

(d) $z^4 - 32 = 14z^2$

3. Carry out the following operations and simplify as much as possible.

(a) $(5 - 3i) - (2 + i)$

(b) $(5 - 3i) \cdot (2 + i)$

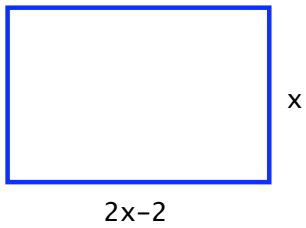
4. You launch a toy rocket with an initial velocity of 120 feet/second. The height of the rocket is given by $h = -16t^2 + 120t$ in feet at t seconds.

(a) When does the rocket land?

(b) How high is the rocket after 3 seconds?

(c) Find all the times at which the rocket is 144 feet high.

5. The following rectangle has an area of 84 square units. What are the dimensions of the rectangle given the lengths in the diagram below?



6. (a) Use the discriminant to determine the number and type (rational, irrational, or imaginary) of solutions of the equation $x^2 - 6x + 13 = 0$.
- (b) Use the quadratic formula to solve the equation $x^2 - 6x + 13 = 0$.
7. Solve the following equations. Simplify your answer as much as possible.
- (a) $(3m + 6)^2 + 4 = 1$
- (b) $4x^2 + 22x = 12$ (Solve by completing the square.)