

Math 30A

Exam 3 – Review Exercises

Do all assigned problems from assignments 15 – 20 and review your notes thoroughly.

Additional exercises: () denotes even numbers only

p. 144 (10-18), (28-58)

p. 154 (6-20)

p. 178 (18-38), (44-54)

p. 216 (8-34), 39, 43, 49, 52

p. 223 (6-24), 43, 45, 49

1. Find a rational, and an irrational number between: $0.\overline{542} = 0.542542542\dots$ and $0.\overline{543} = 0.543543543\dots$
2. Are the irrationals closed under addition, subtraction, multiplication, and division?
3. State the Fundamental Theorem of Arithmetic.
4. Prove $\sqrt{2700}$ is irrational.
5. Prove the Pythagorean Theorem.
6. Determine if each of the following numbers is rational, or irrational.

-5 12.345 $12.\overline{345} = 12.34545\dots$ $\sqrt{4900}$ $\sqrt{500}$ $4.\overline{6214114111411114}\dots$

7. Let W denote the winning number, and I the maximum increment in the Mod Game. Find the winning strategy if
 - a. $W = 289$ and $I = 5$
 - b. $W = 100$ and $I = 6$
 - c. $W = 621$ and $I = 8$