

Name _____

Date _____

Topic 7: Irrational Numbers

Rational vs Irrational

Video Help 1: <https://learnzillion.com/lessons/221-distinguish-between-rational-and-irrational-numbers>

Directions: In #1 – 6, is the number rational or irrational?

1) 15

3) $\frac{3}{5}$

5) π

2) $\sqrt{15}$

4) $\sqrt{16}$

6) 3.14

Estimating Irrational Numbers

Video Help: <https://www.youtube.com/watch?v=uzfRwwDMMfU>

Directions: In #7 – 12, between which two consecutive integers is each number?

7) $\sqrt{54}$

9) $\sqrt{84}$

11) $\sqrt{140}$

8) $\sqrt{41}$

10) $-\sqrt{30}$

12) $-\sqrt{12}$

Ordering Rational and Irrational Numbers

Video Help: <https://www.youtube.com/watch?v=1PeS-Jtw8LA>

Directions: In # 18 – 21, order the numbers from least to greatest.

13) $4, \sqrt{15}, 2, \sqrt{6}, 3, 5$

15) $-\sqrt{15}, -3, -4, -\sqrt{11}, -\sqrt{19}$

14) $2, \sqrt{3}, -1, -\sqrt{7}, \sqrt{6}$

16) $\sqrt{17}, 0, \sqrt{10}, \sqrt{8}$

Simplifying Irrational Numbers

Video Help 1: <https://learnzillion.com/lessons/184-simplify-expressions-involving-square-roots>

Video Help 2: <https://www.khanacademy.org/math/pre-algebra/exponents-radicals/radical-radicals/v/simplifying-radicals>

Directions: In # 17 – 25, simplify the following irrational numbers.

17) $\sqrt{75}$

20) $\sqrt{12}$

23) $6\sqrt{18}$

18) $\sqrt{200}$

21) $5\sqrt{8}$

24) $\sqrt{180}$

19) $\sqrt{108}$

22) $\sqrt{18}$

25) $\sqrt{288}$