

Worksheet Level 3:

Goals:

Classify Rational numbers as natural, whole, integers or just rational.

Classify Real numbers as rational or irrational.

Concept # _____

Practice #1

Answer each multiple choice question and explain your answer.

Which number represents a rational number?

a. $\sqrt{2}$

b. $\sqrt{5}$

c. $\sqrt{10}$

d. $\sqrt{25}$

e. $\sqrt{50}$

Which number represents an integer?

a. $\sqrt{2}$

b. $\frac{10}{21}$

c. $\sqrt{21}$

d. 10

e. $\sqrt{10}$

Which number represents an irrational number?

a. 40

b. $\sqrt{40}$

c. 0

d. $\sqrt{9}$

e. 9

Which number represents a rational number?

a. $\sqrt{2}$

b. $\frac{2}{3}$

c. $\sqrt{3}$

d. $\sqrt{\frac{2}{3}}$

e. $\sqrt{15}$

Practice #2

Use the following list of numbers to answer each question below.

$\sqrt{30}$, $\frac{7}{8}$, $\sqrt{16}$, $\sqrt{\frac{1}{4}}$, $8i$, $-\sqrt{42}$, 3.692692 , 4π , $\sqrt{-20}$

1. Identify an integer from the list of numbers. $\sqrt{16} = 4$

2. Identify two rational numbers from the list of numbers.

$\sqrt{16}$, $\sqrt{\frac{1}{4}}$, $\frac{7}{8}$

3. Identify three irrational numbers from the list of numbers.

$\sqrt{30}$, 4π

1. Cross out the one number which does not belong in the set.

Whole Numbers { 0, 1, 3, 7, ~~8.5~~, 9, 14, ... }

Integers: { -8, 0, 5, ~~3/4~~, 24, -9, -57, ... }

Rational numbers { 14, 3/5, -2.4, $\sqrt{81}$, $0.33\bar{3}$, ~~$\sqrt{40}$~~ , 100, ... }

Irrational numbers { $\sqrt{3}$, π , ~~$\sqrt{49}$~~ , $\sqrt{8}$, 5π , $\sqrt{91}$, $5\sqrt{33}$, ... }

2. List all 9 integers between -3.5 and 5.5.

-3, -2, -1, 0, 1, 2, 3, 4, 5

3. List all 6 whole numbers between -3.5 and 5.5.

0, 1, 2, 3, 4, 5

4. List 3 rational numbers between 3 and 3.9. *lots of answers*

$\frac{10}{3}$, 3.5, 3.7, 3.2, $\frac{32}{10}$

5. Use a calculator to write the decimal expansion. If the number is irrational, then estimate to the thousandths place.

a. $5/12$

d. $7/11$

g. $3/8$

b. $\sqrt{12}$

e. $\sqrt{\frac{4}{9}}$

h. $11/20$

c. $1/3$

f. $\sqrt{78}$

i. $11/18$

True or False:

6. $\sqrt{40}$ has an infinite non-repeating decimal expansion. *true*

7. The number $0.5\bar{6}$ is a rational number *true*

8. -200 and 500 are integers. *true*

9. All numbers with infinite decimal expansions are irrational. *True*

10. the numbers -8, -3, 5, 17 are all whole numbers. *False*