1 Math 5 Lesson 19 Classwork

1.1 Decimal Fractions. Rational and Irrational Numbers

Definition: A rational number is a number that can be written as a fraction of two integer numbers $\frac{p}{q}$, where $q \neq 0$.

Definition: Any real number that is not rational is irrational.

Irrational means that it can not be written as a ratio or two integers (rational number).

Examples:
$\pi = 3.14159265358979323846264338327950288419716939937510..$

$e = 2.71828182845904523536028747135266249775724709369995...$

Definition: A set is countable if you can count the elements

Theorem: The set of rational number Q is countable.
Proof:

1. Convert the following fractions to decimals:
a) $\frac{1}{111}$
b) $\frac{3}{7}$
c) $\frac{-1}{11}$
d)c) $\frac{5}{9}$
e) $\frac{3}{13}$
f) $\frac{2}{5}$
g) $\frac{6}{11}$

2. Convert the decimal fractions to the regular ones.

a) $0.\overline{251}$
b) $-0.231\overline{23}$
c) $45.5\overline{3}$
d) $2.56\overline{34}$
e) $-1.3\overline{2}$

1.2   Review

3. Solve
a)$|3x + 5| + 2x = 4$
b)$| - x - 4| - 3x = 2$

4. Solve
a) $-3(2a + b) - 4(b + a)(4 - 3a)$
b) $2(4a + -3b) - 2(4b + a)(4 - 3b)$

2 Math 5 Lesson 19 Homework

2.1 Decimal Fractions. Rational and Irrational Numbers

1. Convert the following fractions to decimals:
a) $\frac{3}{111}$
b) $\frac{1}{8}$
c) $\frac{-4}{7}$
d)c) $\frac{5}{6}$
e) $\frac{7}{15}$
f) $\frac{2}{7}$
g) $\frac{5}{17}$

2. Convert the decimal fractions to the regular ones.
a) $0.1\overline{65}$
b) $-0.35\overline{25}$
c) $13.7\overline{4}$
d) $2.12\overline{12}$
e) $-1.\overline{21}$

2.2 Review

3. Solve
a)$|4x + 6| - 3x = 5$
b)$| - 4x + 2| - 4x = 1$

4. Solve
a) $-3(5a + 2b) - 4(3b - 2a)(3 - 2a)$
b) $(7a + -7b) - 2(4a + b)(1 - 6b)$