Math 106 Fall 2022 Spring 2022 Practice Quiz 1

For this and any evaluation, *show all your work*.

1. Put the subsets $\mathbb{Q}$, W, $\mathbb{Z}$, $\mathbb{N}$ of $\mathbb{R}$ in order of size, using subset notation $\subset$.

   The biggest subset is the set of irrationals, $\mathbb{Q}'$. It has not common elements with the other subsets. Hence, $\mathbb{Q} \cup \mathbb{Q}' =$

   Give two examples of an irrational number, but not π or *e*.

2. We learned three forms of numbers: decimal, fraction, and percent. Give the other two forms of the numbers below (I did the first two):

Decimal	Fraction	Percent
5	5/1	500%
0.007	7/1000	0.7%
0.32	______	_______
_______	19/100	________
________	________	8.4%
9	______	_______
_______	4/9	________
________	________	291%

3. Write the fractions in lowest terms:

$$\frac{4}{18} \qquad \frac{12}{39} \qquad \frac{17}{51} \qquad \frac{60}{28}$$

4. Two numbers with no common factors are called _______________ . This is the one I accidentally called ‘twin primes’ in the 8:30 class!
Give an example of a pair of twin primes.

5. Simplify each complex fraction: $\dfrac{\frac{2}{5}}{\frac{16}{15}}$ $\qquad$ $\dfrac{9}{3/4}$

Write as two fractions separated by the operation shown. If it can’t be separated, say so:

$\dfrac{x+6}{5}$ $\qquad$ $\dfrac{a-b}{c}$ $\qquad$ $\dfrac{a}{c+d}$ $\qquad$ $\dfrac{a-b}{c+d}$

6. Do the indicated fraction operation. Reduce to lowest terms if possible.

$\dfrac{5}{9}+\dfrac{8}{15} =$ $\qquad$ $7\frac{4}{5}+1\frac{2}{3}=$ $\qquad$ $7\frac{4}{5}-1\frac{2}{3}=$

$\dfrac{5}{9}\cdot\dfrac{8}{15} =$ $\qquad$ $7\frac{4}{5}\cdot 1\frac{2}{3}=$

$\dfrac{4}{7}\div 2 =$ $\qquad$ $6\div 1\frac{2}{3}=$