

# MAT 120 Homework 1

## Fall 2018

Due date: Wednesday, Sep 12

1. Classify the following numbers as rational or irrational:

(a)  $\sqrt{3}$

(b)  $\frac{7}{3}$

(c) 2.33333

(d)  $2.\overline{333}$

(e) 2.03003000300003000003...

(f)  $(\sqrt{8})^3$

(g)  $7^3$

(h)  $(1 - \sqrt{5})(1 + \sqrt{5})$

(i)  $(\sqrt{2} - 1)^2$

2. Classify the following numbers as real or complex nonreal:

(a)  $\sqrt{3}$

(b)  $\sqrt{-3}$

(c)  $(\sqrt{-3})^2$

(d)  $3 + \sqrt{3}$

(e)  $\frac{1}{2} + \frac{\sqrt{3}}{2}i$

3. Find the fractional representation of the following numbers:

(a)  $2.\overline{333}$

(b)  $.01212\overline{12}$

(c)  $12.453453\overline{453}$