

REAL NUMBERS

1. Classify according to number type. Notice that some numbers may be of more than one type.

a) $1.01001000100001\dots$

b) 2.05

c) $-0.\overline{03}$

d) $-\frac{14}{7}$

e) $3.157157157\dots$

2. Sketch the graph of the given interval:

a) $(-3, 2]$

b) $(-\infty, -5)$

c) $[-1, +\infty)$

d) $(0, 6)$

e) $\{x \in \mathbb{R} / -2 \geq x\}$

f) $\{x \in \mathbb{R} / -1 < x < 4\}$

3. Use both interval and set notation to describe the interval shown on the graph:

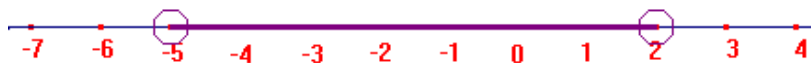
a)



b)



c)



SOLUTION

4. Classify according to number type. Notice that some numbers may be of more than one type.

a) 1.01001000100001..... Irrational number, Real number

b) 2.05 Rational, positive ($2.05 = \frac{205}{100} = \frac{41}{20}$)

c) $-0.0\overline{3}$ Rational, negative ($-0.0\overline{3} = -\frac{3}{99} = -\frac{1}{33}$)

d) $-\frac{14}{7}$ Integer, Rational, negative (-2)

e) 3.157157157.... recurrent decimal positive, Rational ($= \frac{3154}{999}$)

5. Sketch the graph of the given interval:

a) $(-3, 2]$



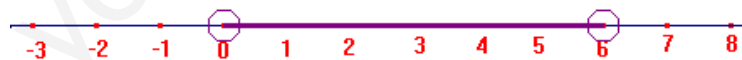
b) $(-\infty, -5)$



c) $[-1, +\infty)$



d) $(0, 6)$



e) $\{x \in \mathbb{R} / -2 \geq x\}$



f) $\{x \in \mathbb{R} / -1 < x < 4\}$

