REAL NUMBERS

1. Classify according to number type. Notice that some numbers may be of more than one type.
   a) 1.01001000100001…….

   b) 2.05

   c) $-0.0\widehat{3}$

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

   e) 3.157157157…….

2. Sketch the graph of the given interval:

   a) $(-3,2]$

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

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

   d) $(0,6)$

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

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

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 $\left(2.05 = \frac{205}{100} = \frac{41}{20}\right)$

   c) $-0.0\widehat{3}$ Racional, negative $\left(-0.03333.. = -\frac{3}{99} = -\frac{1}{33}\right)$

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

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

5. Sketch the graph of the given interval:

   a) $(-3,2]$

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

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

   d) $(0,6)$

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

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