NS- Classification Homework

1. $x = 0.\overline{123}$

$1000x = 123.\overline{123}$

$999x = 123$

$x = \frac{123}{999} \Rightarrow \frac{41}{333}$

2. $x = 0.12\overline{3}$

$100x = 12.3\overline{3}$

$99x = 12.210$

$x = 0.12\overline{3}$

$10x = 1.2\overline{33}$

$1000x = 123.333.$

$990x = 121.100$

$x = \frac{122}{990}$

3. 5. $0.1\overline{23}$

$10x = 1.\overline{23}$

$1000x = 123.\overline{23}$

$990x = 121.00$

$\boxed{x = \frac{122}{990}}$

3. $x = 0.12\overline{3}$

$100x = 12.333.$

$1000x = 123.333.$

$900x = 111$

$\boxed{x = 111/900}$

GOOD WRITE

(4) $0.\overline{102}$

$10x = 1.02\overline{02}$

$1000x = 102.\overline{02}$

$990x = 101$

$$x = \frac{101}{990}$$

(5) $0.10\overline{2}$

$100x = 10.2\overline{22}$

$1000x = 102.\overline{22}$

$$x = \frac{92}{900}$$

(6) $0.\overline{0120}$

$10x = 00.\overline{120}$

$10000x = 00120.\overline{120}$

$9990x = 120$

$$x = \frac{120}{9990}$$

(7) $x = 0.\overline{0120}$

$10000x = 0120.\overline{0120}$

$9999x = 120$

$$x = \frac{120}{9999}$$

(8) ~~$0.0\dot{1}\dot{2}0$~~ $0.01\overline{02}$

$100x = 1.0\overline{2}$

$10000x = 102.\overline{02}$

$9900x = 101$

$$x = \frac{101}{9900}$$

GOOD WRITE

(ix) $0.\overline{0120}$ $x = 0.\overline{0102}$

$10000x = 102.\overline{0102}$

$9999x = 102$

$$x = \frac{102}{9999}$$

(2.) $0.\overline{ab}\,ab\,ab\ldots = \frac{8}{9}$ $\quad a+b$

$8+8=16$

$x = ab.$

$100x = ab.ab.$

$99 = ab.$

$= \frac{ab}{99} \Rightarrow 8+8$ (5)

$\frac{ab}{99} = \frac{8}{9}$

$ab = 88$

(3.) $\frac{x}{0.10} = \frac{105}{07}$

$x = 0.56$ (5)

(5) $x = 0.\overline{abc}\,abc = \frac{17}{37}$ $\quad a+b+c$

$1000x = abc.abc.$

$999x = abc$

$x = \frac{abc}{999} = \frac{17}{37}$

$abc = \frac{17 \times 999}{37} = 459$ (1)

GOOD WRITE