Q.1 Simplify $0.33\ldots$ as a fraction.

A) Let
$$x = 0.33\ldots \tag{1}$$
By multiplying both sides by 10 we get
$$10x = 3.33\ldots \tag{2}$$
Subtracting (1) from (2)
$$10x - x = (3.33\ldots) - (0.33\ldots)$$
$$9x = 3$$

$$3x = 1 \qquad \text{dividing both sides by 3}$$
$$x = \frac{1}{3} \qquad \text{dividing both sides by 3}$$