$x = 0.(1)$

$10x = 10 \cdot 0.(1) = 1.(1) =$

$= 1 + 0.(1) = 1 + x$

$10x = 1 + x$; $10x - x = 1$; $10x - x = (10-1)x = 9x$

$9x = 1$

$x = \frac{1}{9}$

$x = 0.(1) = \frac{1}{9}$

$x = 0.(2)$

$10x = 10 \cdot 0.(2) = 2.(2) =$

$= 2 + 0.(2) = 2 + x$

$10x = 2 + x$; $10x - x = 2$; $9x = 2$

$9x = 2$

$x = \frac{2}{9}$

$x = 0.(2) = \frac{2}{9}$

$x = 0.(3)$

$10x = 10 \cdot 0.(3) = 3.(3) =$

$= 3 + 0.(3) = 3 + x$

$10x = 3 + x$; $10x - x = 3$; $10x - x = (10-1)x = 9x$

$9x = 3$

$x = \frac{3}{9} = \frac{3}{3 \cdot 3} = \frac{1}{3}$

$x = 0.(3) = \frac{1}{3}$

$x = 0.(8) = \frac{8}{9}$

$x = 0.(8)$

$10x = 10 \cdot 0.(8) = 8.(8) =$

$= 8 + 0.(8) = 8 + x$

$10x = 8 + x \; ; \; 10x - x = 8 \; ; \; 10x - x = (10-1)x = 9x$

$9x = 8$

$x = \frac{8}{9}$

$x = 0.(9) = 1$

$x = 0.(9)$

$10x = 10 \cdot 0.(9) = 9.(9) =$

$= 9 + 0.(9) = 9 + x$

$10x = 9 + x \; ; \; 10x - x = 9 \; ; \; 10x - x = (10-1)x = 9x$

$9x = 9$

$x = \frac{9}{9} = 1$