

21.4.3 In each part below, find the fraction that is equal to the given decimal.

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

(b)  $0.\overline{273}$

(c)  $0.6\overline{35}$

(d)  $0.8\overline{81}$

19.1.1 What are the domain and range of the function  $f(x) = 3 \cdot 5^x - 4$ ?

19.1.2 Find all values of  $r$  such that  $5^{2r-3} = 25$ .

19.1.3 Find all values of  $t$  such that  $6^{3t-1} = 36^{t-3}$ .

19.1.4 Suppose  $5^x = 3$ . Find  $5^{2x+3}$ .

19.1.5 Find the value of  $x$  that satisfies the equation  $25^{-2} = \frac{5^{48/x}}{5^{26/x} \cdot 25^{17/x}}$ . (Source: AMC 12)

19.1.6\* Find all solutions to the equation  $3 \cdot 9^t - 82 \cdot 3^t + 27 = 0$ .

19.1.7\* If  $9^{x-1} = 7$ , then what is  $3^{2x+3}$ ?