Recurring Products - Answers

I want to investigate whether multiplying recurring decimals produces a recurring answer. The trouble is that I am struggling to put the decimals into my calculator.

Can you help me convert all the decimals to fractions so that I can easily put them in my calculator?

Problem 1:

$$0.\dot{7} \times 0.\dot{1}\dot{8}$$

$$\mathbf{\frac{7}{9} \times \frac{18}{99} = \frac{7}{9} \times \frac{2}{11}}$$

Problem 2:

$$0.\dot{3}\dot{9} \times 0.\dot{4}0\dot{6}$$

$$\mathbf{\frac{39}{99} \times \frac{406}{999} = \frac{13}{33} \times \frac{406}{999}}$$

Problem 3:

$$0.0\dot{4} \times 0.\dot{3}85\dot{4}$$

$$\mathbf{\frac{4}{90} \times \frac{3854}{9999}}$$

Problem 4:

$$0.0\dot{5}\dot{3} \times 0.7\dot{4}$$

$$\mathbf{\frac{53}{990} \times \frac{67}{90}}$$

Problem 5:

$$0.35\dot{6} \times 0.7\dot{3}64\dot{2}$$

$$\mathbf{\frac{321}{999} \times \frac{73635}{99990} = \frac{107}{300} \times \frac{4909}{6666}}$$