

Multiply by 0.1 and 0.01

H

1 Complete the calculations.

a) $87 \times 0.1 = 87 \times \frac{1}{10} = 87 \div \boxed{10} = \boxed{8.7}$

b) $8.07 \times 0.1 = 8.07 \times \frac{1}{10} = 8.07 \div \boxed{10} = \boxed{0.807}$

c) $870 \times 0.1 = 870 \times \frac{1}{10} = 870 \div \boxed{10} = \boxed{87}$

d) $0.807 \times 0.1 = 0.807 \times \frac{1}{10} = 0.807 \div \boxed{10} = \boxed{0.0807}$

2 Explain why multiplying by 0.1 is the same as multiplying by $\frac{1}{10}$

0.1 is equivalent to $\frac{1}{10}$

3 Complete the calculations.

a) $53 \times 0.01 = 53 \times \frac{1}{100} = 53 \div \boxed{100} = \boxed{0.53}$

b) $530 \times 0.01 = 530 \times \frac{\boxed{1}}{\boxed{100}} = 530 \div \boxed{100} = \boxed{5.3}$

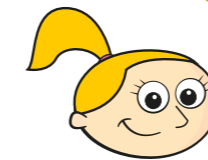
c) $503 \times 0.01 = 503 \times \frac{\boxed{1}}{\boxed{100}} = 503 \div \boxed{100} = \boxed{5.03}$

d) $0.53 \times 0.01 = 0.53 \times \frac{\boxed{1}}{\boxed{100}} = 0.53 \div \boxed{100} = \boxed{0.0053}$

4 Explain why multiplying by 0.01 is the same as dividing by 100

$0.01 = \frac{1}{100}$ and multiplying by $\frac{1}{100}$ is the same as dividing by 100

5



Multiplying by 0.1 and then multiplying by 0.1 again is the same as multiplying by 0.01

Do you agree with Eva? Yes

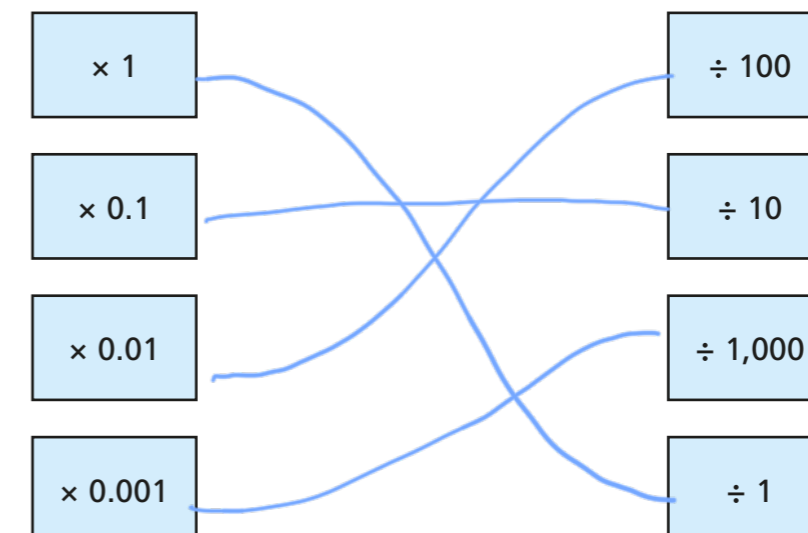
Use examples to support your answer.

$0.1 \times 0.1 = 0.1 \times \frac{1}{10} = 0.1 \div 10 = 0.01$

E.g. $7 \times 0.1 \times 0.1 = 0.7 \times 0.1 = 0.07$ $7 \times 0.01 = 0.07$

Compare answers with a partner.

6 Match the equivalent calculations.



7 Work out the calculations.

- a) $827 \times 0.1 = 82.7$ f) $2.08 \times 0.1 = 0.208$
b) $32 \times 0.01 = 0.32$ g) $0.1 \times 48.9 = 4.89$
c) $30.1 \times 0.01 = 0.301$ h) $0.01 \times 0.47 = 0.0047$
d) $5,060 \times 0.01 = 50.6$ i) $0.1 \times 0.1 = 0.01$
e) $0.7 \times 0.01 = 0.007$ j) $0.01 \times 0.01 = 0.0001$

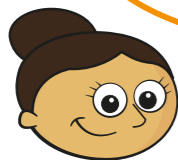
8 Here are some multiplications.

| | | | |
|-------------------|---------------------|-----------------|---------------------|
| 0.308×10 | $3,080 \times 0.01$ | 38×0.1 | $3,800 \times 0.01$ |
| 3.08 | 30.8 | 3.8 | 38 |

Write the products in descending order.

38, 30.8, 3.8, 3.08

9 a)

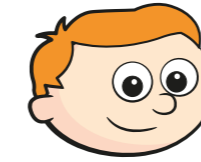


I can think of a multiplication where the number stays the same.

What multiplication might Dora be thinking of?

Multiplying by 1

b)



Sometimes multiplication makes a number greater and sometimes multiplication makes a number smaller.

Do you agree with Ron? Yes

Use examples to explain your answer.

E.g. $7 \times 10 = 70$ (greater)

$7 \times 0.1 = 0.7$ (smaller)

Discuss your answers to parts a) and b) with a partner.

10 Fill in the missing numbers.

a) $14.3 \times 10 \times 0.1 = 14.3$

b) $48.3 \times 0.01 \times 100 = 48.3$

c) $0.01 \times 712 \times 0.1 = 0.712$

d) $91 \times 10 \times 0.01 = 9.1$

e) $0.02 \times 0.1 \times 1,000 = 2$

f) $0.006 \times 0.1 \times 100 = 0.06$