Divide decimals by integers
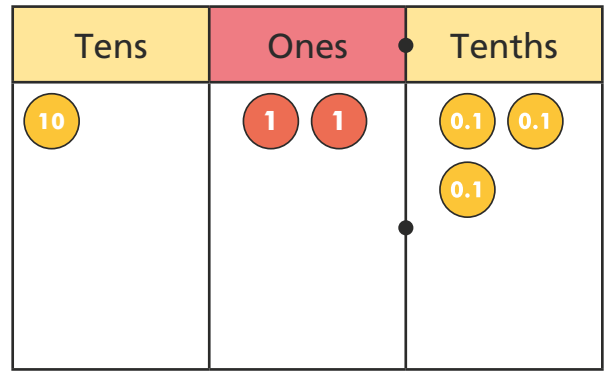
1 Use place value counters to work out the divisions.

a) 8.4 ÷ 4 = $\boxed{2.1}$
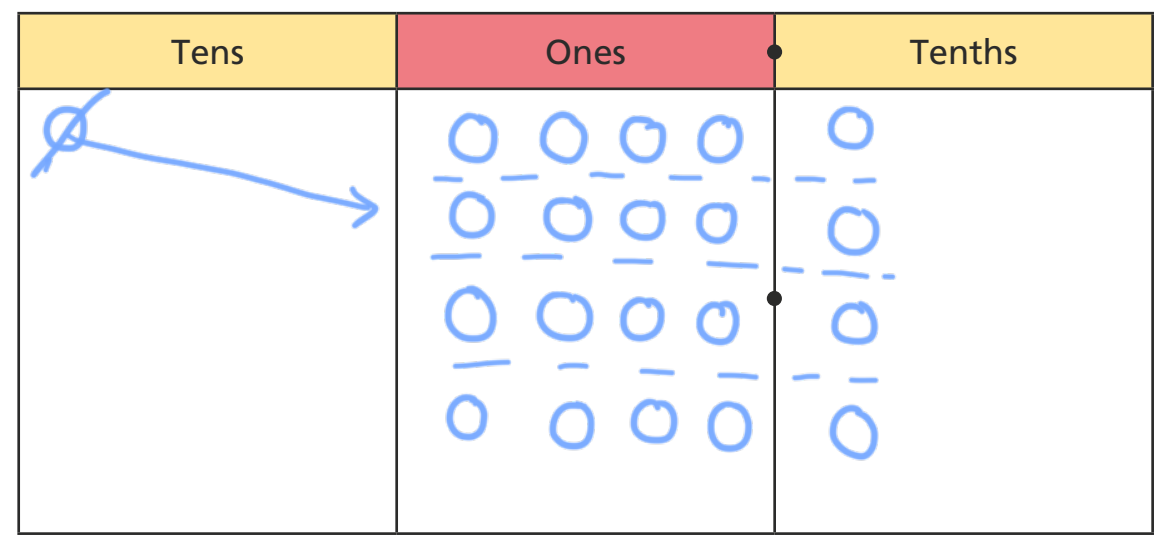
Ones	Tenths
1 1	0.1 0.1
1 1	0.1 0.1
1 1	
1 1	

b) 12.3 ÷ 3 = $\boxed{4.1}$
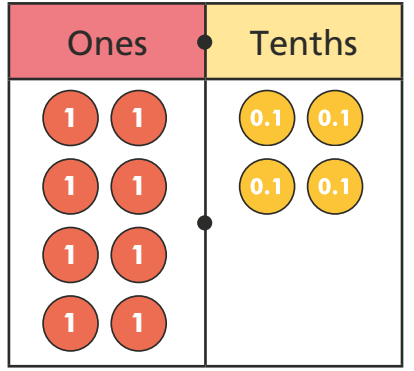
Tens	Ones	Tenths
10	1 1	0.1 0.1
		0.1

2 Work out the division. Draw your answer.

16.4 ÷ 4 = $\boxed{4.1}$

Tens	Ones	Tenths
	O O O O	O
	O O O O	O
	O O O O	O
	O O O O	O

3 Brett uses short division to work out 13.2 ÷ 6

$$6\overline{)1\,{}^13.{}^12} = 0\,2.2$$
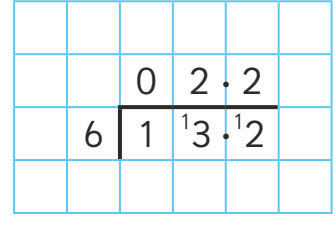
Use short division to work out the calculations.

a)
$$7\overline{)2\,{}^22.4} = 0\,3.2$$

b)
$$8\overline{)1\,8.4\,8} = 0\,2.31$$
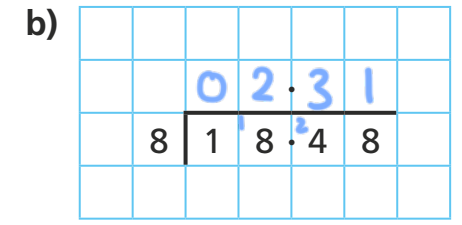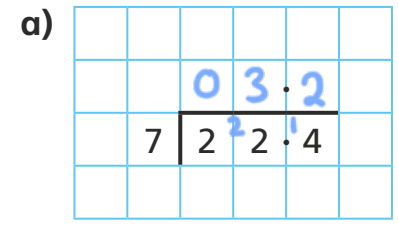
4 Work out the divisions.

a) 25.6 ÷ 8 = $\boxed{3.2}$

b) 14.8 ÷ 4 = $\boxed{3.7}$

c) 18.48 ÷ 6 = $\boxed{3.08}$

d) $\boxed{3.89}$ = 19.45 ÷ 5

e) 202.35 ÷ 3 = $\boxed{67.45}$

f) 105.12 ÷ 9 = $\boxed{11.68}$

5 Esther solves 13.2 ÷ 4 by partitioning 13.2 into two numbers that are easier to divide.

```
           13.2
          /    \
       12        1.2
        |         |
       ÷ 4       ÷ 4
        ↓         ↓
        3        0.3

      13.2 ÷ 4 = 3.3
```
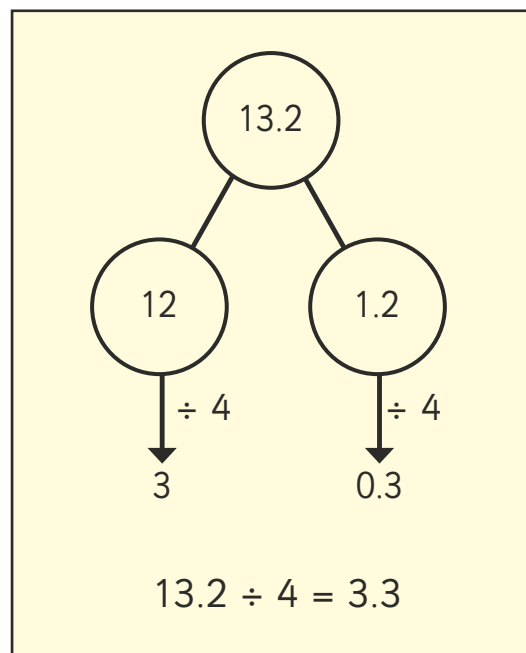
Use Esther's method to complete the part-whole model and calculation.

a)
```
           9.2
          /    \
        8        1·2
        |         |
       ÷4        ÷4
        ↓         ↓
        2        0·3
```

b)
```
          16.5
          /    \
       15        1·5
        |         |
       ÷3        ÷3
        ↓         ↓
        5        0·5
```
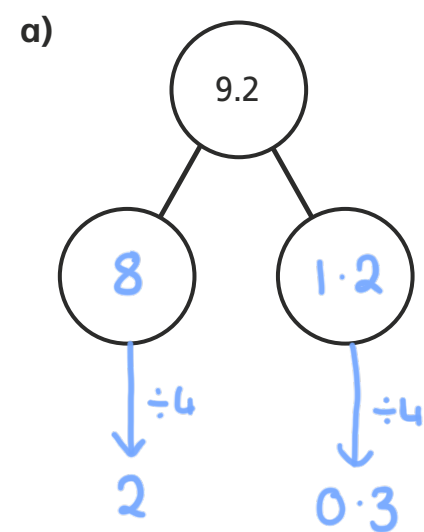
9.2 ÷ 4 = 2·3
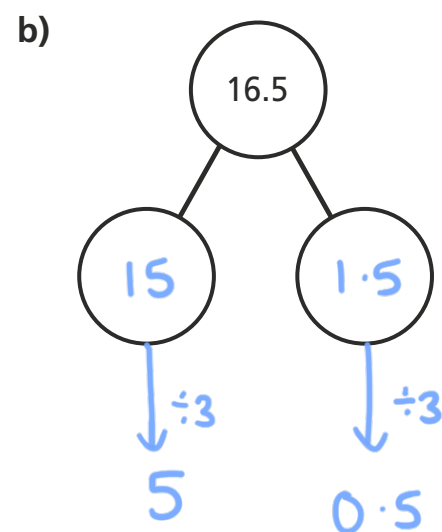
16.5 ÷ 3 = 5·5

Compare answers with a partner. Did you partition your numbers in the same way?

6 Work out the divisions.

a) 9.64 ÷ 4 = 2·41

96.4 ÷ 4 = 24·1

0.964 ÷ 4 = 0·241

9.64 ÷ 8 = 1·205

b) 19.44 ÷ 9 = 2·16

19.53 ÷ 9 = 2·17

19.62 ÷ 9 = 2·18

7 Fill in the missing numbers.

3.6 ÷ 4 = 36 ÷ 40

3.6 ÷ 4 = 7·2 ÷ 8

8 Complete the calculation.

e.g. 8.4 ÷ 2 = 4.2 ÷ 1

How many different solutions can you find?

What patterns do you notice? Talk about it with a partner.