

Reasoning and Problem Solving

Step 5: Divide Decimals by Integers

Teaching note: We suggest providing a variety of concrete resources to support children in solving these problems.

National Curriculum Objectives:

Mathematics Year 6: (6F9a) [Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places](#)

Mathematics Year 6: (6F9c) [Use written division methods in cases where the answer has up to two decimal places](#)

Differentiation:

Questions 1, 4 and 7 (Reasoning)

Developing Explain whether an answer is true or false. Includes numbers with one decimal place which are divided by 2, 3, 4 or 5. Some exchanging, and some pictorial support given.

Expected Explain whether an answer is true or false. Includes numbers with two decimal places which are divided by any digit up to and including 9. Some exchanging, and some pictorial support given.

Greater Depth Explain whether an answer is true or false. Includes numbers with up to three decimal places (including zero) which are divided by any digit up to 9. Some decimal numbers presented in words with unconventional partitioning.

Questions 2, 5 and 8 (Problem Solving)

Developing Calculate a missing digit. Includes numbers with one decimal place which are divided by 2, 3, 4 or 5. Some exchanging.

Expected Calculate a missing digit. Includes numbers with two decimal places any digit up to and including 9. Some exchanging, and some pictorial support given.

Greater Depth Calculate a missing digit. Includes numbers with up to three decimal places (including zero) which are divided by any digit up to 9. Some decimal numbers given in words.

Questions 3, 6 and 9 (Reasoning)

Developing Explain why a statement is correct or incorrect. Includes numbers with one decimal place which are divided by 2, 3, 4 or 5. Some exchanging, and some pictorial support given.

Expected Explain why a statement is correct or incorrect. Includes numbers with two decimal places which are divided by any digit up to and including 9. Some exchanging, and some pictorial support given.

Greater Depth Explain why a statement is correct or incorrect. Includes numbers with up to three decimal places (including zero) which are divided by any digit up to 9.

More [Year 6 Decimals](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Divide Decimals by Integers

Divide Decimals by Integers

1a. True or false?

$6.5 \div 5 = 1.5$



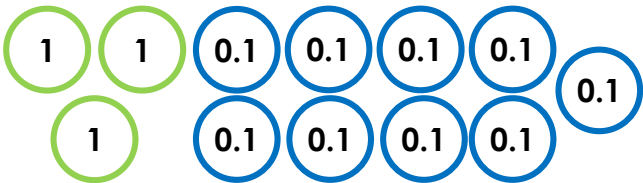
Explain your answer.



R

1b. True or false?

$3.9 \div 3 = 3.3$



Explain your answer.



R

2a. Calculate the missing digits.

A.

	2	.	3
4	9	.	—

B.

	2	.	7
3	—	.	1



PS

2b. Calculate the missing digits.

A.

	3	.	6
2	—	.	2

B.

	1	.	9
5	9	.	—



PS

3a. Jaiden says,



I think that the answers to $2.4 \div 2$ and $9.6 \div 3$ are the same

0	.	†
	.	
	.	

Is he correct? Explain how you know.



R

3b. Millie says,



I think that $8.8 \div 2$ is greater than $4.4 \div 4$

0	.	†
	.	
	.	

Is she correct? Explain how you know.



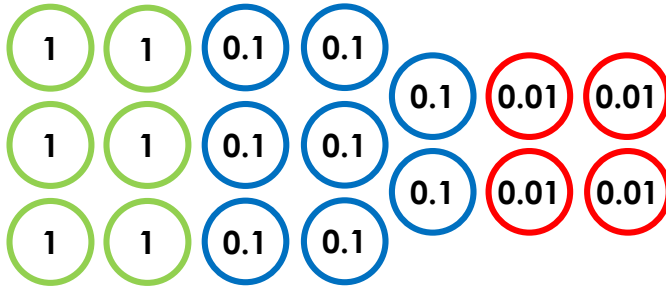
R

Divide Decimals by Integers

Divide Decimals by Integers

4a. True or false?

$$6.84 \div 4 = 1.73$$



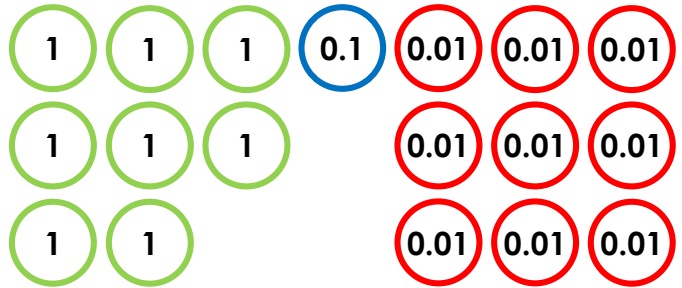
Explain your answer.



R

4b. True or false?

$$8.19 \div 9 = 0.81$$



Explain your answer.



R

5a. Calculate the missing digits.

A.

	2	.	1	2
4	8	.	___	8

B.

	1	.	1	4
7	7	.	9	___



PS

5b. Calculate the missing digits.

A.

	0	.	8	1
6	4	.	___	6

B.

	1	.	0	4
8	8	.	3	___



PS

6a. Florence says,



I think that the answers to $4.48 \div 4$ and $3.36 \div 3$ are the same

Is she correct? Explain how you know.



R

6b. Saad says,



I think that $8.88 \div 8$ is greater than $4.44 \div 4$

Is he correct? Explain how you know.



R

Divide Decimals by Integers

Divide Decimals by Integers

7a. True or false?

eight ones, ten tenths
and twenty-seven
thousandths $\div 9 = 1.03$

Explain your answer.



R

7b. True or false?

seven ones, eighty-nine
hundredths and three
thousandths $\div 3 = 2.633$

Explain your answer.



R

8a. Calculate the missing digits.

A. $8.___\text{08} \div 4 = 2.027$

B. $8.79___ \div 2 = 4.399$



PS

8b. Calculate the missing digits.

A. $9.___\text{54} \div 9 = 1.106$

B. $7.02___ \div 7 = 1.003$



PS

9a. Nadia says,



I think that the answers to
 $9.018 \div 9$ and $3.006 \div 3$
are the same

Is she correct? Explain how you know.



R

9b. Will says,



I think that
 $10.105 \div 5$ is greater than
 $14.707 \div 7$

Is he correct? Explain how you know.



R

Reasoning and Problem Solving

Divide Decimals by Integers

Developing

1a. False, the answer is 1.3 because when dividing in the tenths column there are 3 lots of 5, not 5.

2a. A. 9.2; B. 8.1

3a. No because $2.4 \div 2 = 1.2$ and $9.6 \div 3 = 3.2$.

Expected

4a. False, the answer is 1.71 because when dividing in the hundredths column, there is only 1 lot of 4, not 3.

5a. A. 8.48; B. 7.98

6a. Yes because both calculations have an answer of 1.12.

Greater Depth

7a. False, the answer is 1.003 because there is a missing zero as a place holder in the hundredths column.

8a. A. 8.108; B. 8.798

9a. Yes because both calculations have an answer of 1.002.

Reasoning and Problem Solving

Divide Decimals by Integers

Developing

1b. False, the answer is 1.3 because when dividing in the ones column, there is only 1 lot of 3, not 3.

2b. A. 7.2; B. 9.5

3b. Yes because $8.8 \div 2 = 4.4$ and $4.4 \div 4 = 1.1$.

Expected

4b. False, the answer is 0.91 because when dividing in the tenths column, there are 9 lots of 9, not 8.

5b. A. 4.86; B. 8.32

6b. No because both calculations have an answer of 1.11.

Greater Depth

7b. False, the answer is 2.631 because when dividing in the thousandths column, there is 1 lot of 3, not 3.

8b. A. 9.954; B. 7.021

9b. No because $14.707 \div 7 = 2.101$, so it is greater than $10.105 \div 5 = 2.021$.