White Rose Maths

Year 6

Decimals

Tommy says,

The more decimal places a number has, the smaller the number is.

Do you agree?
Explain why.

Alex says that 3.24 can be written as 2 ones, 13 tenths and 4 hundredths.

Do you agree?

How can you partition 3.24 starting with 2 ones?
How can you partition 3.24 starting with 1 one?
Think about exchanging between columns.

Four children are thinking of four different numbers.

3.454	4.445
4.345	3.54

Teddy: "My number has four hundredths."
Alex: "My number has the same amount of ones, tenths and hundredths."
Dora: "My number has less ones that tenths and hundredths."
Jack: "My number has 2 decimal places."

Match each number to the correct child.

Using the digit cards 0-9 create a number with up to 3 decimal places e.g. 3.451

Cover the number using counters on your Gattegno chart.

10,000	20,000	30,000	40,000	50,000	60,000	70,000	80,000	90,000
1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000
100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009

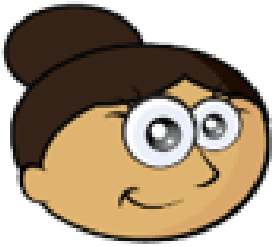
Explore what happens when you multiply your number by 10, then 100, then 1,000

What patterns do you notice?

0	1	2	3	4	5	6	7	8	9

10,000	20,000	30,000	40,000	50,000	60,000	70,000	80,000	90,000
1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000
100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009

Dora says,



When you multiply by 100, you should add two zeros.

Do you agree?
Explain your thinking.

Using the following rules, how many ways can you make 70?

- Use a number from column A
- Use an operation from column B.
- Use number from column C.

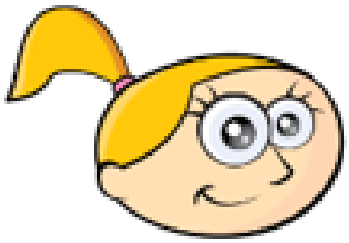
A	B		C
0.7	×	÷	0.1
7			1
70			10
700			100
7,000			1,000

Can you find a path from 6 to 0.06?
You cannot make diagonal moves.

6	×10	×10	÷100
÷10	×100	×100	÷10
×10	÷10	÷1,000	÷100
÷1,000	×1,000	×100	0.06

Is there more than one way?

Eva says,



When you divide by 10, 100 or 1,000 you just take away the zeros or move the decimal point.

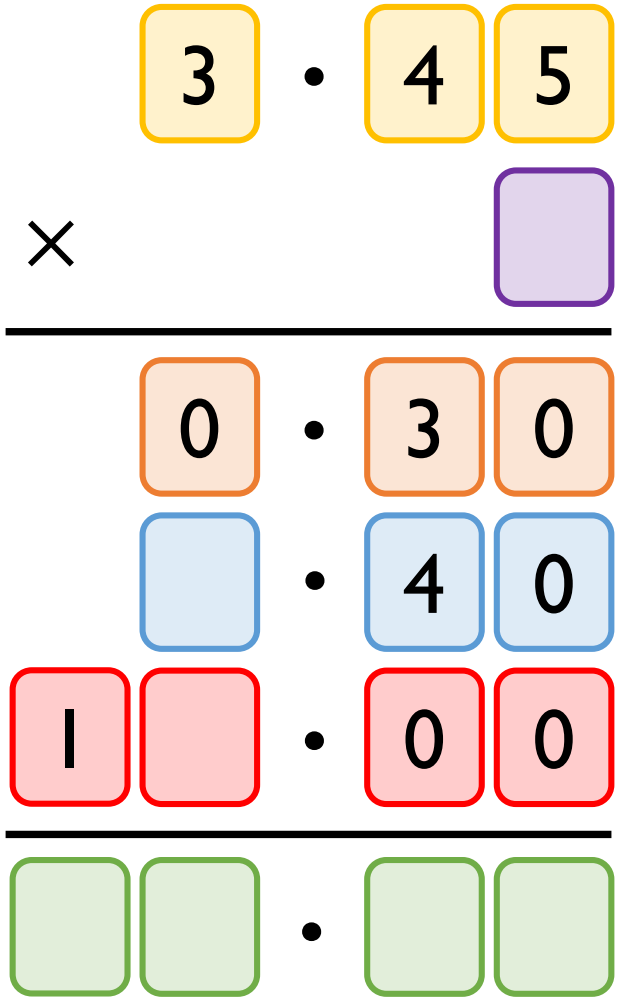
Do you agree?
Explain why.

Whitney says,

When you multiply a number with 2 decimal places by an integer, the answer will always have more than 2 decimal places.

Do you agree?
Explain why.

Fill in the blanks.



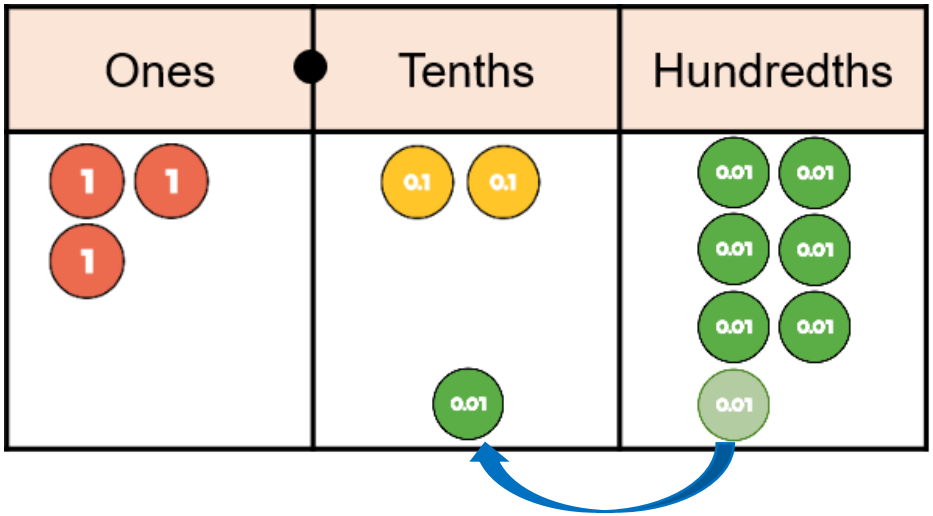
Chocolate eggs can be bought in packs of 1, 6 or 8
What is the cheapest way for Dexter to buy 25 chocolate eggs?

1 chocolate egg
52p

6 chocolate eggs
£2.85

8 chocolate eggs
£4

When using the counters to answer 3.27 divided by 3, this is what Tommy did:



Tommy says,

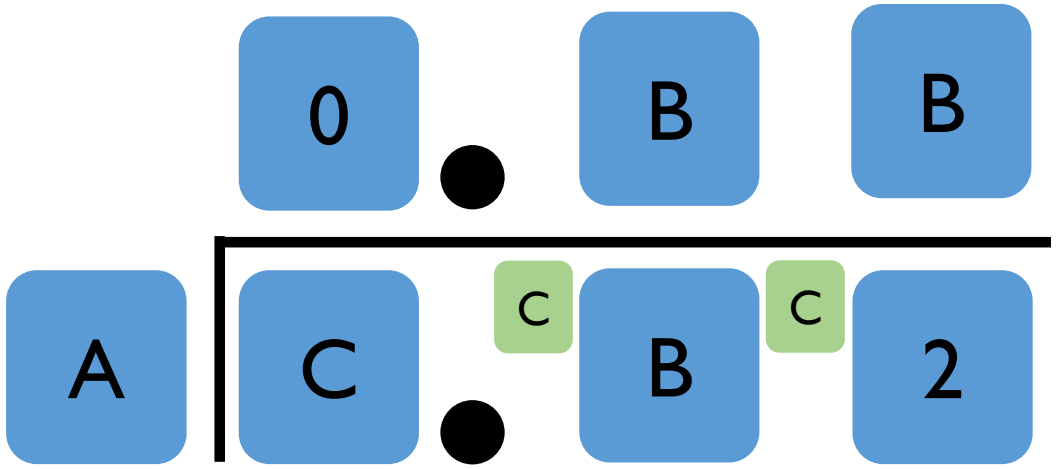
I only had 2 counters in the tenths column, so I moved one of the hundredths so each column could be grouped in 3s.

Do you agree with what Tommy has done? Explain why.

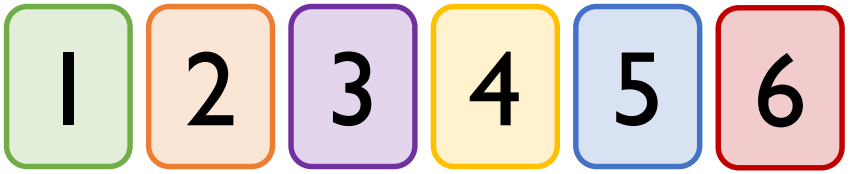
C is $\frac{1}{4}$ of A

B = C + 2

Use the clues to complete the division.



Each division sentence can be completed using the digits below.



$\square . 3 \div \square = 0.26$

$12 . \square \div \square = 4.2$

$4 . \square 8 \div \square = 1.07$

Jack and Rosie are both calculating the answer to 147 ÷ 4

Jack says,

The answer is 36 remainder 3

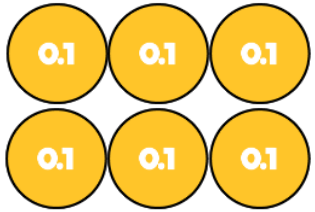
Rosie says,

The answer is 36.75

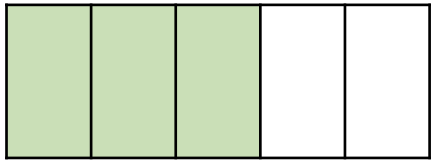
Who do you agree with?

Odd one out.

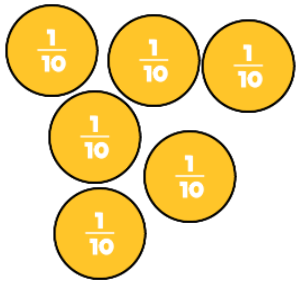
A



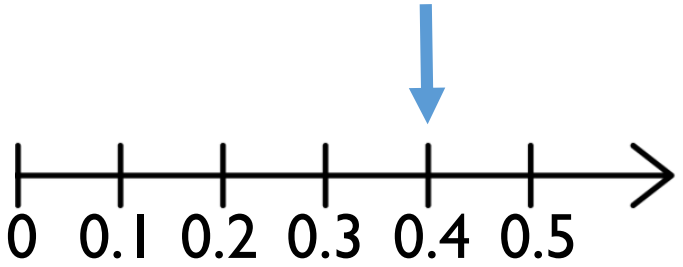
B



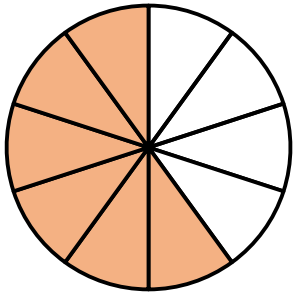
C



D



E

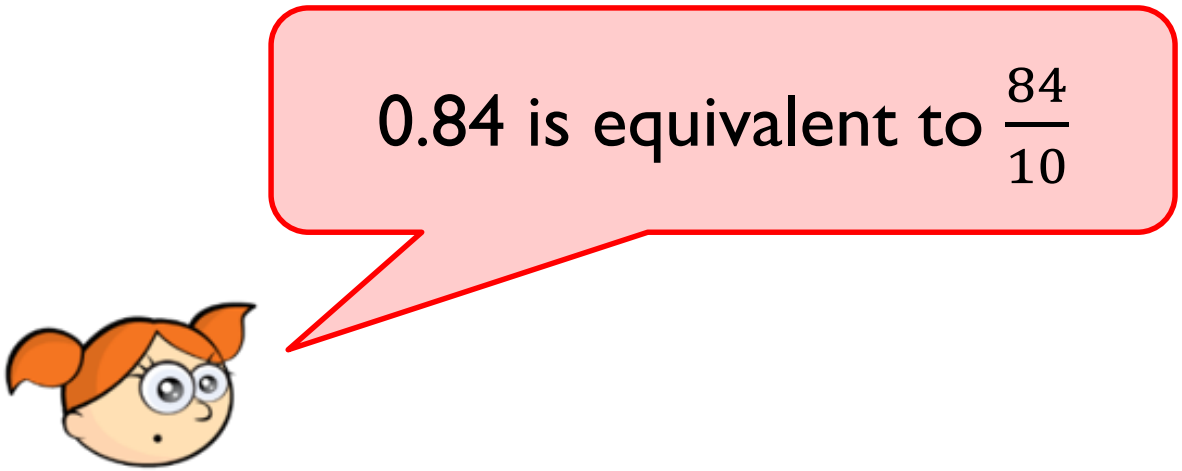


F

0.2×3

Which is the odd one out and why?

Alex says,



Do you agree?
Explain why.

Amir says,

The decimal 0.42 can be read as 'four tenths and two hundredths'.

Teddy says,

The decimal 0.42 can be read as 'forty-two hundredths'.

Who do you agree with?
Explain your answer.

True or False?

0.3 is bigger than $\frac{1}{4}$

Explain your reasoning.

Dora and Whitney are converting $\frac{30}{500}$ into a decimal.

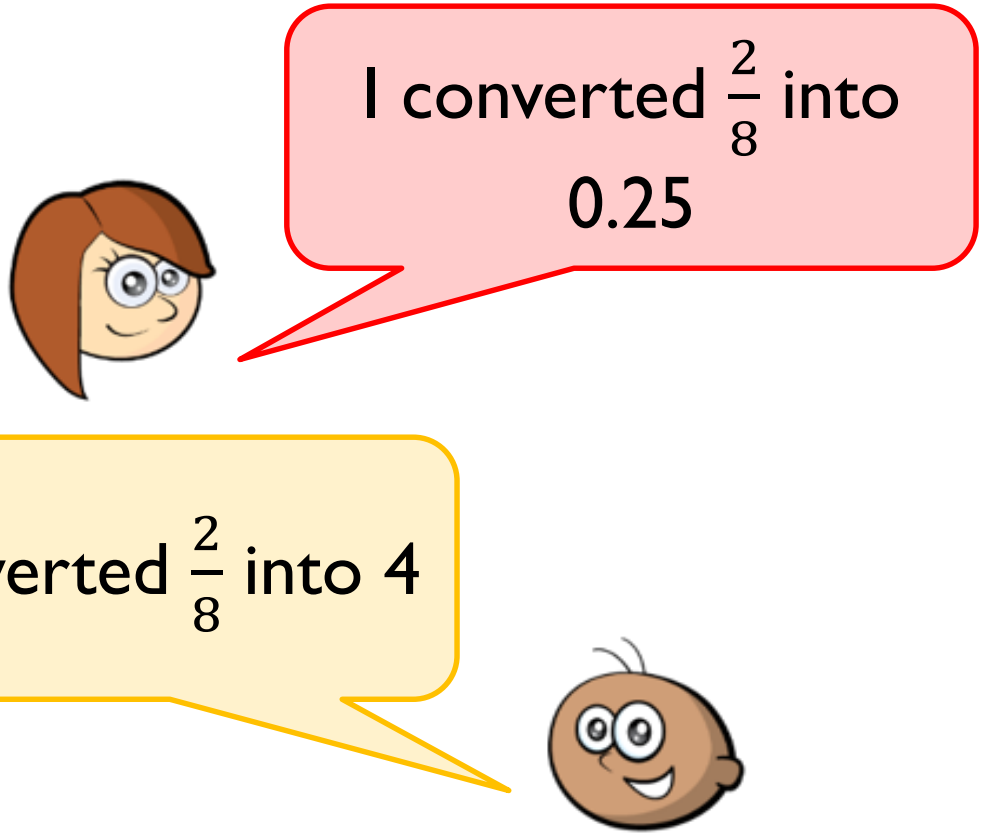
- Dora doubles the numerator and denominator, then divides by 10
- Whitney divides both the numerator and the denominator by 5
- Both get the answer $\frac{6}{100} = 0.06$

Which method would you use to work out each of the following?

$\frac{25}{500}$ $\frac{125}{500}$ $\frac{40}{500}$ $\frac{350}{500}$

Explain why you have used a certain method.

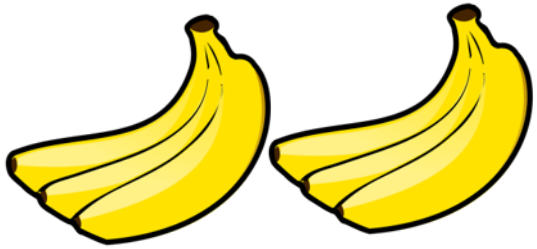
Rosie and Tommy have both attempted to convert $\frac{2}{8}$ into a decimal.



Who is correct?

Prove it.

Mo shares 6 bananas between some friends.



Each friend gets 0.75 of a banana.

How many friends does he share the bananas with?
Show your method.