Divide Decimals by Integers

1. James is trying to solve a puzzle in an escape room.

He has found several keys with different division calculations on each one.

He says,

> I have worked out that I will need a combination of 3 different keys. When the sum of all 3 calculations are added together, a number with 2 decimal places between 40 and 50 will allow me to escape.

Key 1	Key 2	Key 3	Key 4	Key 5	Key 6	Key 7

56.6 ÷ 5	25.2 ÷ 4	84.63 ÷ 3	62.9 ÷ 5	45.32 ÷ 2	82.56 ÷ 8	46.2 ÷ 6

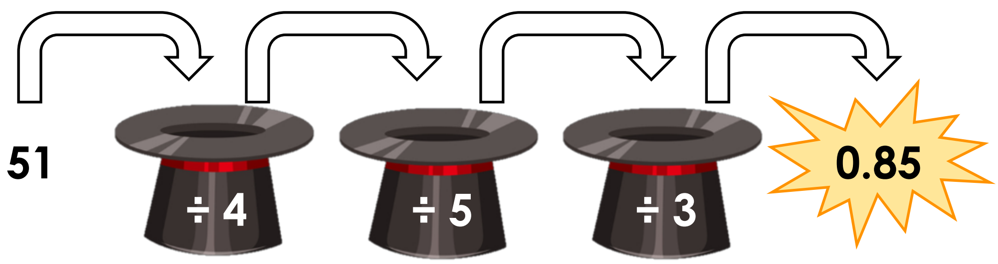
What could this number be? Investigate which combination of keys James could use in order to solve the puzzle. Explore different possible solutions.

DP

2. Marvin the Magician has 3 magical hats that divide anything placed in them by the 1-digit number shown on the front.

He wants to find 2-digit numbers that, when placed in his hats in succession, create a final number that is between 0 and 5 with 2 decimal places.

He has already found one 2-digit number that works:



Explore other possible numbers that Marvin could put in his hats.

Investigate the outcomes if Marvin changed the order of his hats.

DP

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What could this number be? Investigate which combination of keys James could use in order to solve the puzzle. Explore different possible solutions.
Various answers, for example: His number could be 47.23 if he chose Key 1, Key 3 and Key 7, as 11.32 + 28.21 + 7.7 = 47.23.

DP

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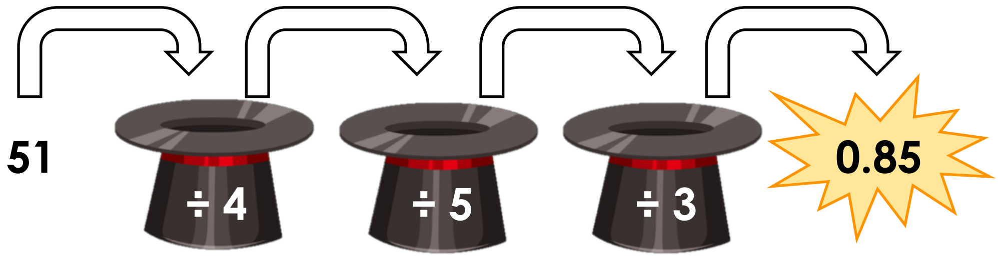

Explore other possible numbers that Marvin could put in his hats.
Various answers, for example: 45; 45 ÷ 4 = 11.25; 11.25 ÷ 5 = 2.25; 2.25 ÷ 3 = 0.75
Investigate the outcomes if Marvin changed the order of his hats.
Various answers, for example: 51; 51 ÷ 5 = 10.2; 10.2 ÷ 4 = 2.55; 2.55 ÷ 3 = 0.85. No matter which order the hats are in, the answer should always be the same.

DP