

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



$$56.6 \div 5$$

Key 2



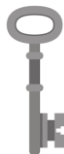
$$25.2 \div 4$$

Key 3



$$84.63 \div 3$$

Key 4



$$62.9 \div 5$$

Key 5



$$45.32 \div 2$$

Key 6



$$82.56 \div 8$$

Key 7



$$46.2 \div 6$$

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

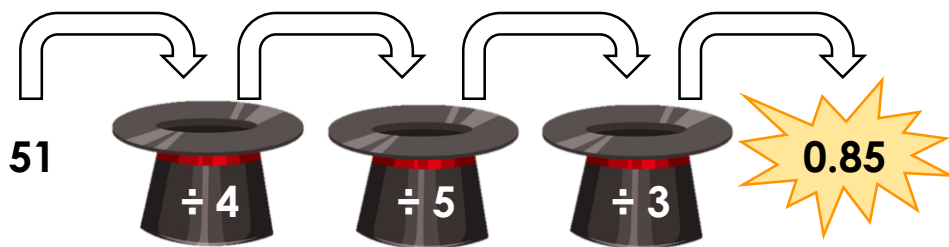
Various answers, for example: His number could be 47.23 if he chose Key 1, Key 3 and Key 7, as $11.32 + 28.21 + 7.7 = 47.23$.

DP

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.

Various answers, for example: 45; $45 \div 4 = 11.25$; $11.25 \div 5 = 2.25$; $2.25 \div 3 = 0.75$

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

Various answers, for example: 51; $51 \div 5 = 10.2$; $10.2 \div 4 = 2.55$; $2.55 \div 3 = 0.85$. No matter which order the hats are in, the answer should always be the same.

DP