

11.03.24

## Number Nest Weekly Challenge



### Warm up

Order the following fractions in ascending order.

(a)  $\frac{6}{15}$     $\frac{7}{15}$     $\frac{8}{15}$     $\frac{11}{15}$

b)  $\frac{19}{40}$     $\frac{23}{40}$     $\frac{27}{40}$     $\frac{29}{40}$

c)  $\frac{1}{4}$     $\frac{3}{10}$     $\frac{7}{20}$     $\frac{2}{5}$

d)  $\frac{5}{18}$     $\frac{4}{9}$     $\frac{1}{2}$     $\frac{2}{3}$

### Activity

1. Rosie can get to the library by bus or by walking. If she walks to the library and takes the bus home, it takes her an hour. If she takes the bus there and back, then her total journey time is half an hour. How long would it take her to walk to the library and back?

Taking the bus one way takes 15 minutes, so walking one way must be 45 minutes. Therefore, walking to the library and back would take 90 mins.

2. Will and Maryam are playing a game of tennis. If Will loses this game, he will have won the same number of games as Maryam. If Will wins the game, he will have won twice as many games as Maryam. How many games had each of them won before they started this game?

Maryam has won 2 games and Will has won 3 games.

3. When the Weasley family waved goodbye to Harry Potter, they walked home in single file. Bill was as many places in front of Charlie as Percy was behind Ron. Charlie and Fred were in even numbered places and Percy was in an odd numbered place. George was behind Percy and Ron was behind Sleepy, but there is no information about Ginny's place. In what order did the Weasleys walk home? Explain your reasoning.

The Weasley's walk home in the order: Bill, Charlie, Ginny, Ron, Percy, Fred, George

We are told that Bill is in front of Charlie who is in front of Ron who is in front of Percy who is in front of George. Now Charlie is in an even numbered place (2, 4 or 6); he can't be in



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position 6 as there are 3 others behind him. If Charlie is in position 4, Ron, Percy and George must be in positions 5, 6 and 7 respectively. But Percy is in an odd position, so Charlie can't be in position 4 and must be in position 2. Bill is therefore in position 1.

As Charlie is in position 2, Percy can't be in position 3 (because Ron is between Charlie and Percy) or in position 7 (as George is behind Percy), so must be in position 5.

As Bill is one place in front of Charlie, Ron must be one place in front of Percy, so Ron is in position 4.

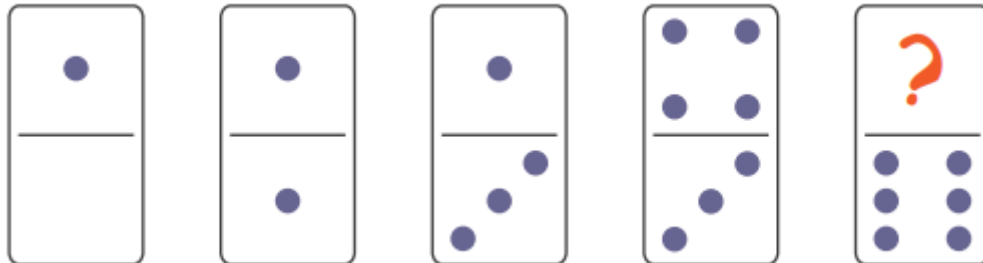
One even numbered place, 6, is left so Fred must be in position 6.

As Percy is in position 5, and Fred is in position 6, George, who is behind Percy, must be in position 7.

Finally Ginny must take the last remaining place, so is in position 3.

## Puzzle

How many dots are missing from the domino with the question mark to complete this pattern?



The dominoes follow a  $+ 1, + 2, + 3, + 4, + 5$  pattern, so the missing domino needs 5 more spots.