

Arya

To tackle this problem I decided to work systematically. Therefore, I first started with number 1. I looked carefully and saw the rectangle was split in half and that number 1 was a quarter of the half. The sum would be $1/4$ of $1/2$ which equals $1/8$. Next, I looked at number 2. Easily, I could see it was a half of 1. So the answer would be $1/8$ of $1/2$ which equals $1/16$. After that, I saw that number 3 was three times the size of number 2. The calculation would be $1/16$ of $3/1$. The result of this would be $3/16$. Number 4 was a bit tricky. I looked at the two small triangles next to it and saw that joining them together would make number 4. This means that number 4 was a half of number 1. $1/8$ of $1/2$ is equal to $1/16$. Obviously, number 5 was a quarter of a half. $1/4$ of $1/2$ is equal to $1/8$. Number 6 was a half of number 5 so the sum was $1/8$ of $1/2$. This equals $1/16$. Number 7 was $3/4$ of 1. The sum was $3/4$ of $1/8$. As a result, the answer was $3/32$. 8 was $1/8 - 3/32$ because $3/32$ plus 8 is equal would equal 1. The answer was $1/32$. 9 was $1/32$ because it was a quarter of 5. $1/8$ of $1/4$ is equal to $1/32$. Finally, number 10 was a half of number 9. The sum was $1/32$ of $1/2$. The last solution was $1/64$. To make sure, I added up all the calculations (including the ones that weren't numbered) and reached an answer of 1.

Matin

1= $1/8$, there are eight 1's in the whole rectangle, therefore it is $1/8$
2= $1/16$, $1/4 \times 1/16$
3= $3/16$, $1/3 \times 1/16$
4= $1/16$, $2 \times 8 = 4$
5= $1/8$, $1/4 \times 1/2$
6= $1/16$, $1/8 \times 1/4$
7= $3/32$, $7 + 8 \quad 1/8 - 1/8 - 1/32$
8= $1/32$, $1/2 \times 1/4 \times 1/4$
9= $1/32$, $1/4 \times 1/8$
10= $1/64$, $1/2$ of 9

Jodie

My solution: 1 = $1/8$ - you can fit 8 of them into the whole rectangle. 2 = $1/16$ - it is $1/2$ of number 1. 3 = $3/16$ - number 3 and number 2 add up to $1/4$. 4 = $1/16$ - it is double number 8 and number 8 = $1/32$. 5 = $1/8$ - it is $1/2$ of $1/4$ on the whole rectangle. 6 = $1/16$ - it is $1/2$ of number 5 and number 5 = $1/8$. 7 = $3/32$ - number 7 and number 8 = $1/8$ of the rectangle. 8 = $1/32$ and number 7 = 3 x number 8. 8 = $1/32 - 4 \times$ number 8 = $1/8$. 9 = $1/32$ - it is $1/2$ of number 6. 10 = $1/64$ - it is $1/2$ of number 9.

Joshua

To start off I studied the rectangle and straight away I worked on number 5; in which I did $1/4 \times 1/2$ this gave me the answer $1/8$. Next, I calculated 6 by doing $1/2 \times 1/8$ giving me $1/16$. Due to the fact that 9 was half of 6 and 10 half of 9 I halved 6; this gave me the answer

for 9, which was $\frac{1}{3}$, then I halve 9 this gave me the answer of $\frac{1}{64}$ for 10. Moving on to the other side, straight away I could tell that 1 was half of $\frac{1}{4}$ thus giving me $\frac{1}{8}$ after that I worked out 2 by halving 1 and this gave me $\frac{1}{16}$. To then find 3 I knew that $\frac{1}{4} = \frac{4}{16}$ so I subtracted 2, $\frac{1}{16}$, from a $\frac{1}{4}$ giving me $\frac{3}{16}$ this equalling to 3. Moving back to the other side again I split the last $\frac{1}{4}$ into $\frac{1}{32}$'s and then worked out that 4 equalled $\frac{1}{16}$ and then worked out that 8 equalled $\frac{1}{32}$ and then finally by subtracting 8 from $\frac{1}{4}$ worked out that 7 equalled $\frac{3}{32}$

Zara and Alex

Starting off, we looked at the easiest fraction to work out; it was one. The answer was a half of quarter of the shape, thus, $\frac{1}{8}$. Next, 2 was $\frac{1}{16}$ because it is half of $\frac{1}{8}$. Thirdly, to find number three I multiplied $\frac{1}{16}$ by three (because it is 3 times the size of number 2) So the answer is $\frac{3}{16}$. After, I worked out five, again it was $\frac{1}{8}$ because it was half of a quarter. $\frac{1}{16}$ was the answer to number 6 due to the fact it was half of no. 5. Moving onto seven. This part is slightly more complicated. To break up the problem first we noticed that part of the shape was $\frac{1}{16}$ then the other part filled half of the opposite $\frac{1}{16}$ shape (and half of $\frac{1}{16}$ is $\frac{1}{32}$) so when added they equal $\frac{3}{32}$. 8 equals $\frac{1}{32}$ because it is in a rectangle that equals $\frac{1}{16}$. It fills half of that space thus equalling $\frac{1}{32}$. Furthermore, no. 9 is a quarter of no. 5 (which is $\frac{1}{8}$) so 9 is $\frac{1}{32}$. Finally, 10 is equivalent to half of 9, so the answer is $\frac{1}{64}$. Thus concluding this problem

Kate and Mohammed

1 = $\frac{1}{8}$. $\frac{1}{2}$ multiplied by $\frac{1}{4}$ equals $\frac{1}{8}$. 2 = $\frac{1}{16}$. $\frac{1}{2}$ multiplied by $\frac{1}{8} = \frac{1}{16}$. 3 = $\frac{3}{16}$. 2 = $\frac{1}{16}$. $\frac{4}{16} = \frac{1}{4}$. Shape 3 + shape 2 = $\frac{1}{4}$. 4 = $\frac{1}{16}$. $\frac{1}{8}$ multiplied by $\frac{1}{2} = \frac{1}{16}$. 5 = $\frac{1}{8}$. $\frac{1}{2}$ multiplied by $\frac{1}{4} = \frac{1}{8}$. 6 = $\frac{1}{16}$. $\frac{1}{2}$ multiplied by $\frac{1}{8} = \frac{1}{16}$. 7 = $\frac{3}{32}$. 8 = $\frac{1}{16}$. $\frac{1}{8}$ multiplied by $\frac{1}{2} = \frac{1}{16}$. 9 = $\frac{1}{32}$. $\frac{1}{4}$ multiplied by $\frac{1}{8} = \frac{1}{32}$. 10 = $\frac{1}{64}$. $\frac{1}{8}$ multiplied by $\frac{1}{8} = \frac{1}{64}$.

Maddie, Grace and Seren

We started by working out 1 by halving the rectangle horizontally and vertically, therefore we got our answer $\frac{1}{8}$. Following our recent discovery ($\frac{1}{8}$) we used the same method but in a slightly different way. We halved shape 1 to get $\frac{1}{16}$, also known as shape 2. Shape 3 was slightly harder because we had to add both fractions we had just figured out. Number 4 was quite challenging, but we managed it ($\frac{3}{32}$). Number 5 was half of a half of a half of the shape is $\frac{1}{8}$. Number 6 half of number 5 ($\frac{1}{16}$). Number 7 was = to $\frac{1}{8} + \frac{1}{32}$. Number 8 is half of number 4 so $\frac{1}{16} \times \frac{1}{2} = \frac{1}{32}$. Number 9 is half of number 6 which is $\frac{1}{32}$. Finally number 10 it is half of of number 9 so it is $\frac{1}{32} / \frac{1}{2}$ which is $\frac{1}{64}$

Patrick and Adam

1. Number 1 equals $\frac{1}{8}$ because $\frac{1}{4}$ multiplied by $\frac{1}{2}$ equals $\frac{1}{8}$. $\frac{1}{2}$ of the quarter and multiply that by $\frac{1}{4}$ because there is 4 quarters. So the answer is $\frac{1}{8}$. 2. Number 2 is $\frac{1}{16}$ because it's half of number 1. 3. 3 is $\frac{3}{16}$ because it is $\frac{3}{4}$ of the quarter. So you find the common denominator by finding the common number between 4 and 16 which is 16 so you multiply that and the equation is $\frac{3}{4} \times \frac{1}{4}$ equals $\frac{3}{16}$. 4. Number 4 is $\frac{1}{16}$ because 8 multiplied by two! 5. Is $\frac{1}{8}$ because it is half of the quarter so you multiply that by 4 so the equation is $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$. 6. Is $\frac{1}{16}$ because it is a quarter of the quarter and so the equation is $\frac{1}{4} \times \frac{1}{4} = \frac{1}{16}$. 7. Number 7 is $\frac{3}{32}$ because you add shape 8 and shape 6. 8. Number 8 is $\frac{1}{32}$ because if you double the shape it equals $\frac{1}{16}$ so you double that. 9. Is $\frac{1}{8}$ of a quarter so you multiply that by 4 to get $\frac{1}{32}$. $\frac{1}{8} \times \frac{1}{4} = \frac{1}{32}$. 10. Number ten is $\frac{1}{64}$ because it's half of nine.

Megan and Ethan

1 = $\frac{1}{8}$ because $\frac{1}{4}$ of $\frac{1}{2} = \frac{1}{8}$
 2 = $\frac{1}{16}$ because $\frac{1}{2}$ of $\frac{1}{8} = \frac{1}{16}$
 3 = $\frac{3}{16}$ because $\frac{3}{4}$ of $\frac{1}{4} = \frac{3}{16}$
 4 = $\frac{1}{16}$ because $\times \frac{1}{2}$ by $\frac{1}{8} = \frac{1}{16}$
 5 = $\frac{1}{8}$ because $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$
 6 = $\frac{1}{16}$ because $\frac{1}{2} \times \frac{1}{16} = \frac{1}{16}$
 7 = $\frac{3}{32}$
 8 = $\frac{1}{32}$
 9 = $\frac{1}{32}$ because $\frac{1}{4}$ of $\frac{1}{8} = \frac{1}{32}$
 10 = $\frac{1}{64}$ because $\frac{1}{2}$ of $9 = \frac{1}{2} \times \frac{1}{32} = \frac{1}{64}$

Alice and Lauren

We figured out the rectangle by dividing it into 4 to make it easier. We found some hard and some fairly simple to work out. We did the easier ones first to help us with the tricky ones. These are our answers: (in the order we did them.) 5 ~ $\frac{1}{4} * \frac{1}{2} = \frac{1}{8}$ 6 ~ $\frac{1}{2}$ of shape 5 = $\frac{1}{16}$ 9 ~ It is $\frac{1}{2}$ of shape 6 = $\frac{1}{32}$ 10 ~ $\frac{1}{2}$ of $\frac{1}{32} = \frac{1}{64}$ 1 ~ $\frac{1}{4}$ of a $\frac{1}{8} = \frac{1}{16}$ 2 ~ $\frac{1}{2}$ of a $\frac{1}{8} = \frac{1}{16}$ 3 ~ $\frac{1}{8} + \frac{1}{16} = \frac{3}{16}$ 8 ~ $\frac{1}{2}$ of a $\frac{1}{4} = \frac{1}{8}$ $\frac{1}{8} / 4 = \frac{1}{32}$ 7 ~ $\frac{1}{16} + \frac{1}{32} = \frac{3}{32}$ 4 ~ $\frac{1}{8} / 4 = \frac{1}{32}$ $\frac{1}{32} + \frac{1}{32} = \frac{2}{32}$

Toby

I worked out how number one is one eighth because if you divide the rectangle by 8, it gives you enough space for number one to fit in 8 times. Number two is one sixteenth, because it is one quarter of one quarter; it also fits into number one twice. Number 3 is three sixteenths because it is simply one quarter take away one sixteenth = three sixteenths. Number 4 is exactly the same as number two just in a different shape. Number 5 is the same as number one but it is also another shape, which makes it look like a different fraction. Number 6 is half of number one and exactly the same as number 4 and 2. Number 7 is three over thirty two and is also three of the number eights. Number 8 is one over thirty two, because it is 3 times as small as number 7 and it is one sixteenth times one half. Number 9 is also one over thirty two and is 8 just a different shape, it is one

sixteenth times one half. Number 10 is the smallest out of all the fractions and is one sixty fourth, it is one over thirty two times one half.

Miah and Taylor

For number 1 we put $1/8$ because it is a quarter of half of the rectangle $1/4 * 1/2 = 1/8$. We thought that number 2 was $1/16$ because you can see that it is half of number 1 $1/2 * 1/8 = 1/16$ For number 3 we thought $3/16$ because if you take $1/16$ from a $1/4$ you get $3/16$ Number 4 is $1/16$ because if you split the rectangle into $1/8$ you can see that it is half of the $1/8$ which is $1/16$ $1/2 * 1/8 = 1/16$ We thought that number 5 is $1/8$ because it is half of a $1/4$ of the rectangle $1/2 * 1/4 = 1/8$ For number 6 we thought it was $1/16$ because because if you split the rectangle into $1/8$ number 6 is half of one of the $1/8$. $1/2 * 1/8 = 1/16$ Number 7 is $3/16$ because $1/32 + 1/16 = 3/16$ We thought that number 8 was $1/32$ because if you split the rectangle into $1/8$ you can see that number 8 is a $1/4$ of the $1/8$. $1/2 * 1/16 = 1/32$ For number 9 we thought that it was $1/32$ because you can see that it is a $1/4$ of number 5. $1/2 * 1/16 = 1/32$ Number 10 is $1/64$ because $1/2 * 1/32 = 1/64$

Ross and Samuel

1. $1/8$ because it is half of a quarter $1/2 * 1/4 = 1/8$ 2. $1/16$ because half of $1/8$. $1/8 * 1/2$ 3. $9/16$ because it is halve of $1/4$ and add $1/16$. 4. $1/16$ As it is a quarter of a quarter. I split the quarter into quarters and saw that two triangles equal $1/16$ and triangle 4 had two of those triangles so it equals $1/16$. 5. $1/8$ as I split $1/4$ into halves and the 5 square was halve of $1/4$. 6. $1/16$ I split it into a quarter in to a quarter which equals $1/16$ 7. $3/32$ then I split The quarters into quarters and I saw it was $3/32$ 8. is $1/32$ because it is $1/16$ 9. is $1/32$ because it is half of $1/16$ 10. is $1/64$ because it is half of $1/16$ and half again