Rectangle Tangle

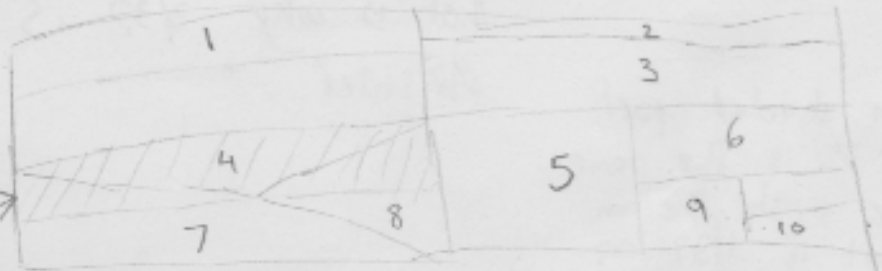
The rectangle was divided into lots of shapes. I focused on each alone.

1/8 ← Shape 1: Shape 1 was 1/8 (Answer) because the big rectangle was divided into four main quarters. The shape was one half of the quarter which means 1/4 ÷ 2 = 1/8. You can make 1/4 = 2/8 and when 2/8 are halved, they make 1/8. (are equal.)

1/6 ← Shape 2: Shape 2 is half of Shape 1. Therefore shape 2 is 1/16. (Answer) This can be proven by putting two shape 2's in shape 1. Shape two x2 doesn't overlap or leave gaps for shape 1.

3/16 ← Shape 3: Shape 1 + Shape 2 = Shape 3. Shape 1 can be made 2/16 and with shape 2 (1/16) 2/16 + 1/16 = 3/16. (Answer)

1/16 ← Shape 4:



Shape 4 can be halved to make four equal parts. This proves shape 4 is half of the 1/8 shape. That means 1/8 ÷ 2 = 1/16. Answer

1/8 ← Shape 5: If you cut shape one in half and align them one under another, the shape that is made is shape 5. This means that shape 1 and shape 5 are the same. Hence, since shape 1 is 1/8, that make shape 5 also 1/8.

1/16 ← Shape 6: Shape 6 fits into shape 5 twice perfectly. This means shape 6 is half the size of shape 5. Shape five is 1/8 and can be turned into 2/16 and still be the same value. If you half 2/16, it makes 1/16. Therefore, shape 6 is 1/16.

3/32 ← Shape 7:

The shaded part is the same as shape 4 which is equal to 1/16. 1/16 is equal to 2/32. The blank part of shape 7 is half of the shaded part. Thus, being 1/32. The shaded part (2/32) + the non shaded part (1/32) equals 3/32. That is why 3/32 is the answer.

1/32
↑ Shape 8: The non shaded part of shape 7 is the same as shape eight. The non shaded part is 1/32 as explained before. That is why it is 1/32.

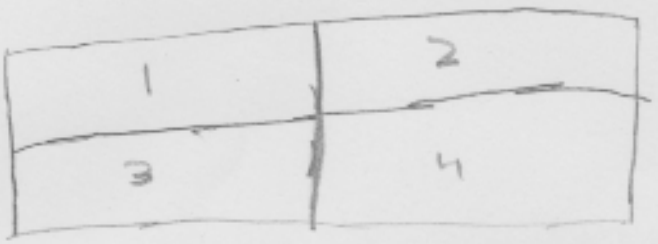
Shape 9: Shape 9 is half of shape shape 6. Since shape 6 is 1/16 and can be turned in 2/32 (still having the same value). When you half 2/32, it makes 1/32

↓
1/32

Shape 10: Shape 10 is half of shape 9 which is 1/32. 1/32 is the same as 2/64 and half of 2/64 is 1/64. That is why 1/64 is the answer.

↓
1/64

The bigge rectangle was divided into 4 main quarters.



To make sure each shape had the right fraction, I added each smaller shape in each quarter to add to 1/4.

Quarter 1: 1/8 + 1/8 = 2/8 which is equal to 1/4.

Quarter 2: 3/16 + 1/16 = 4/16 which is equal to 1/4.

Quarter 3: 1/16 = 2/32. 2/32 + 1/32 + 1/32 + 1/32 + 3/32 = 8/32
8/32 is equal to 1/4.

Quarter 4: 1/32 = 2/64. 1/16 = 4/64. 1/8 = 8/64. 2/64 + 4/64 + 8/64 + 1/64 + 1/64 = 16/64 which is equal to 1/4.
= 16

1/4 x 4 = 1 whole rectangle