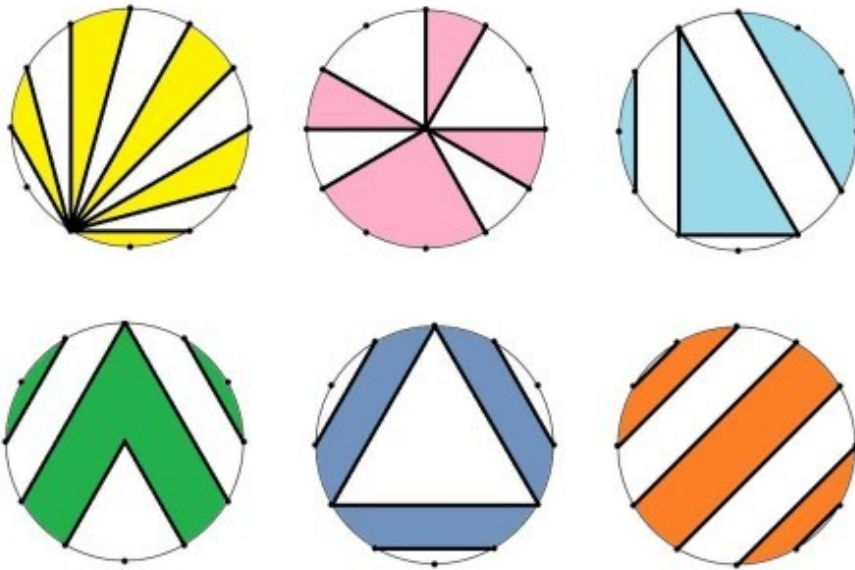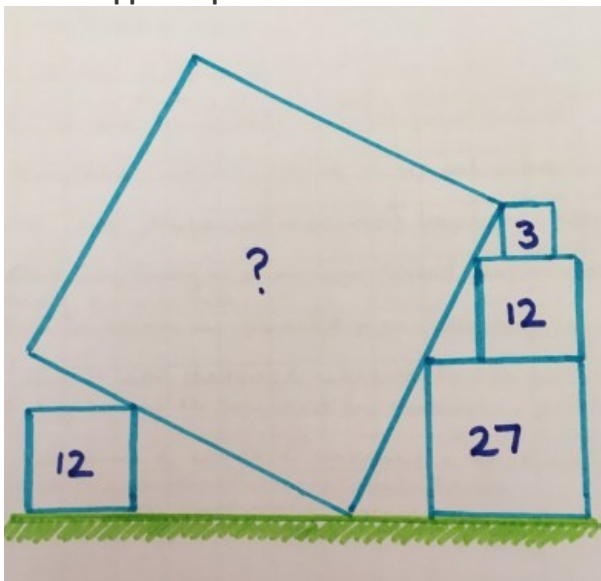## 1. The Garden of Clocks

What fraction of each circle is shaded? (The 12 dots are equally spaced; the only point used inside the circle is the centre.)
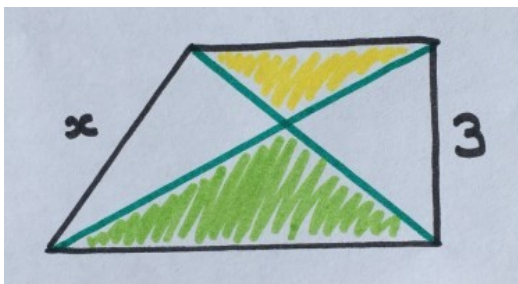"Unfortunately, my favourite one of the six is the only one I didn't come up with myself," says Catriona, "the dark blue one."

2. The Toppled Square

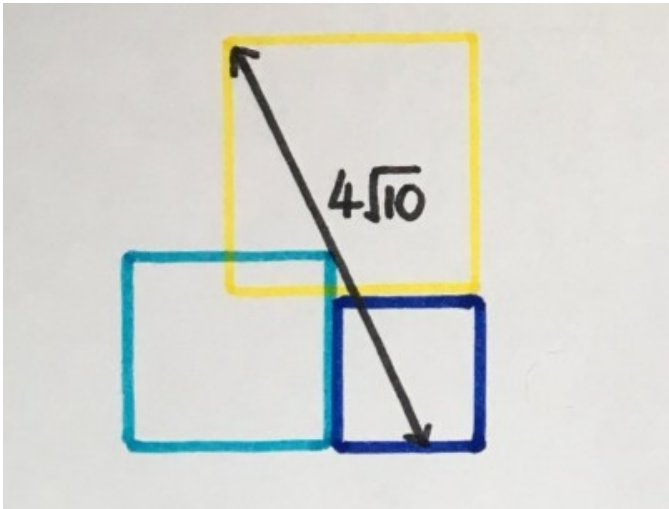(This one feels like an instant classic to me.)

3. It's a Trap

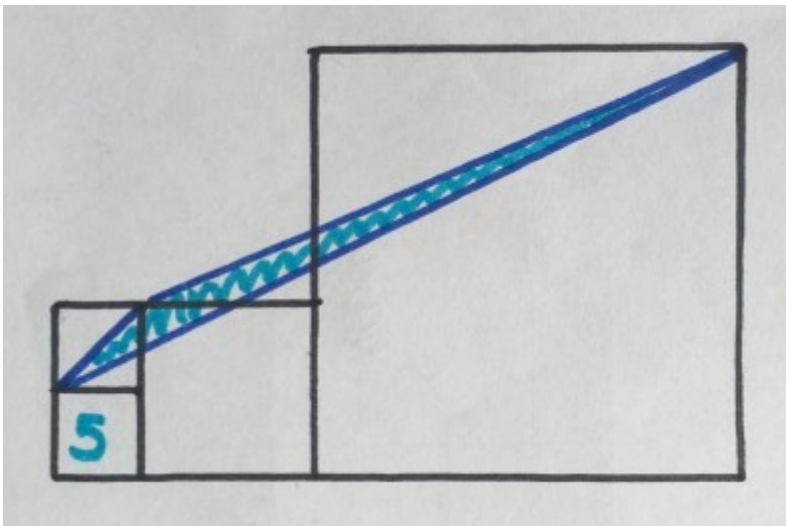In this right-angled trapezium, the green area is 6 more than the yellow area. **What's x?**
"A 'second attempt' puzzle that was nicer than the first one I came up with."

4. Three Square Meals

The side lengths of the three squares are consecutive integers. **What's the total area?**
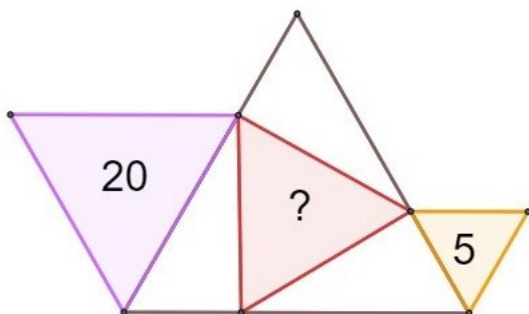"I quite like this one – I drew lots of pretty patterns based on it."

5. Shear Beauty

The area of the bottom left square is 5. **What's the area of the blue triangle?**
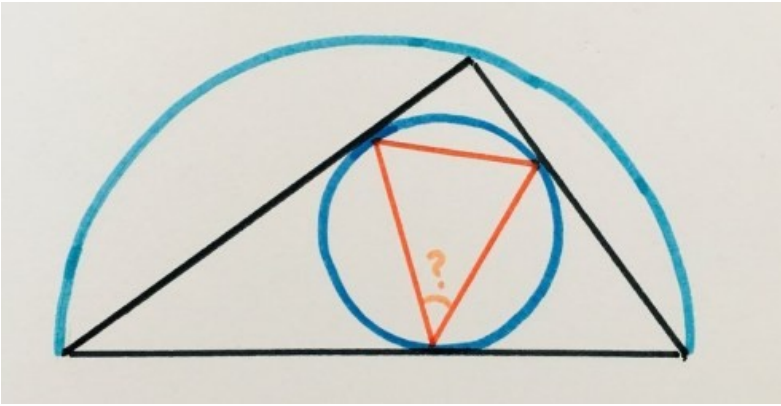"Probably my all-time favourite. It just looks impossible! Apparently the solution method used here is called shearing (unfortunately, not in my honour)."
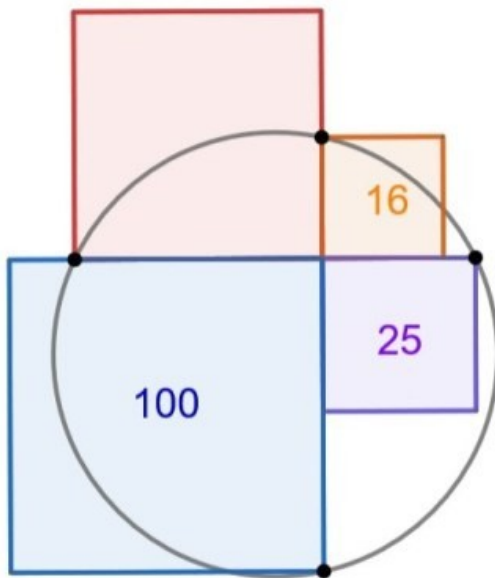
6. All Men are Created Equilateral

"Another corollary that I much prefer to the original."

7. Semicircle Turducken

"I find angles puzzles much harder to write. My students told me this one was quite easy, but my parents found it really hard. I think you need to 'know' more to do this one, but the problem-solving aspect is easier."
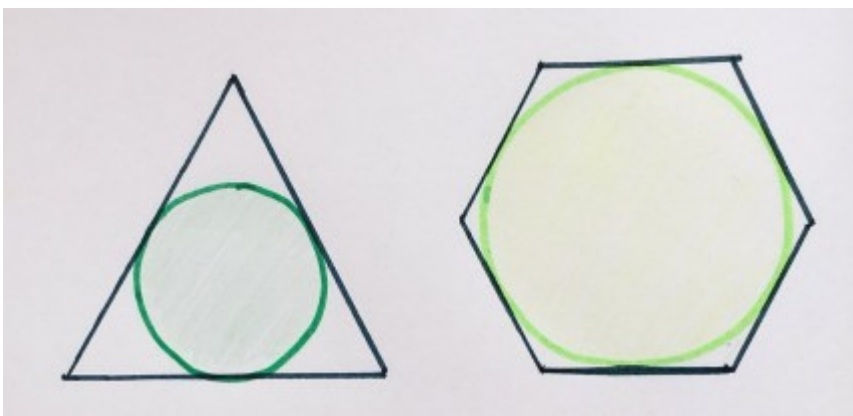
8. Power Chords

What's the area of the circle?
"I never learnt the intersecting chords theorem at school, so I love anything where I get to use it!"
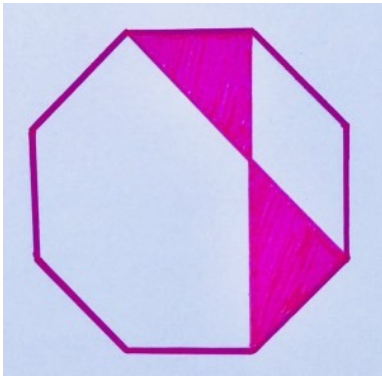
9. Tale of Two Circles

These regular polygons have the same perimeter. Find the ratio of the area of the circles.
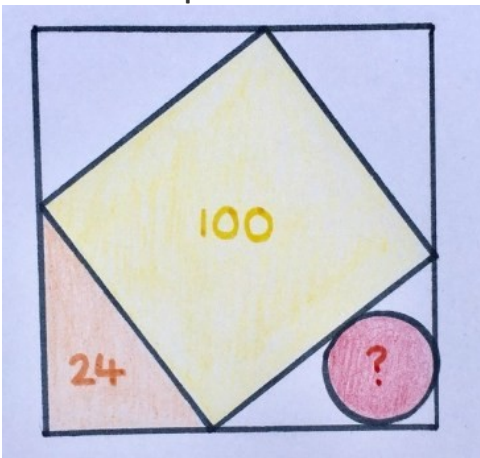"This was a corollary to a different puzzle, but I like it more than the original!"
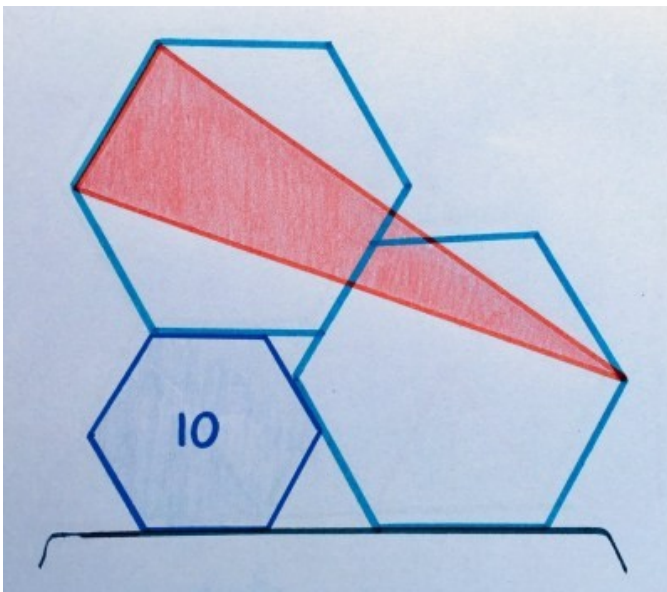
10. Doc Oct

The shaded area has the same value as the perimeter of the regular octagon. **What is this value?**

"I think this one's quite neat, although it looks like a massive rip-off of Ed Southall's puzzles."
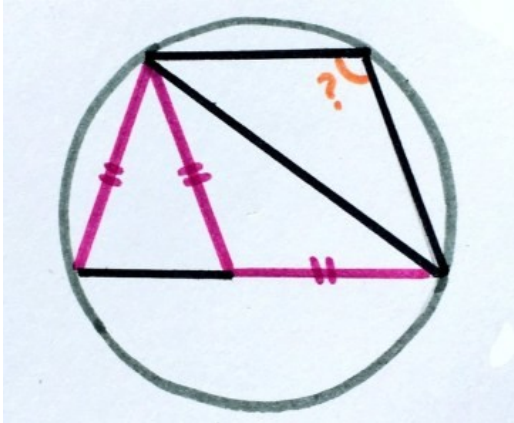
11. All in the Square

"I like the fact that although you can work out all the dimensions of the orange triangle from the information here (and I did when I solved it), you don't actually need to – using the area and the hypotenuse is enough."

12. Spike in the Hive

Two of the regular hexagons are identical; the third has area 10. What's the area of the red triangle?

"This one's quite neat – I like the fact that you don't need to work out any of the actual side lengths, which are almost certainly horrible."
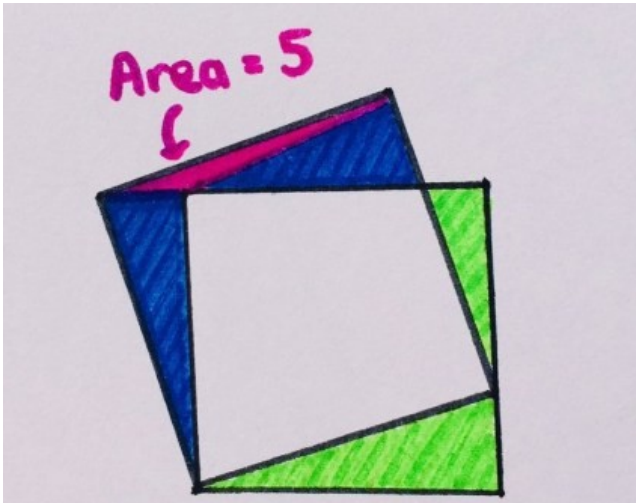
13. Isosceles I Saw

All 4 triangles are isosceles. **What's the angle?**

"I think the wording of this one is my favourite. Lots of people missed the important information and concluded there were infintely many solutions!
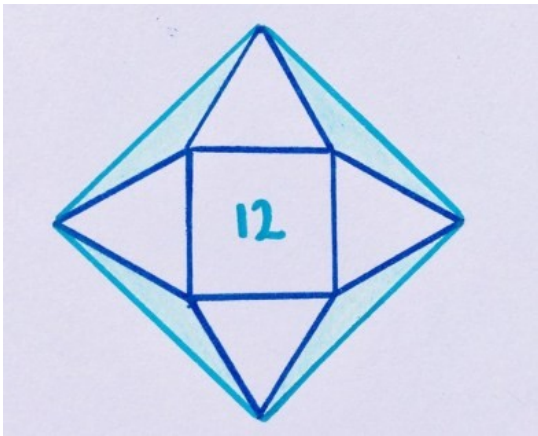
14. Green vs. Blue

Is more of this design green or blue (and by how much)?

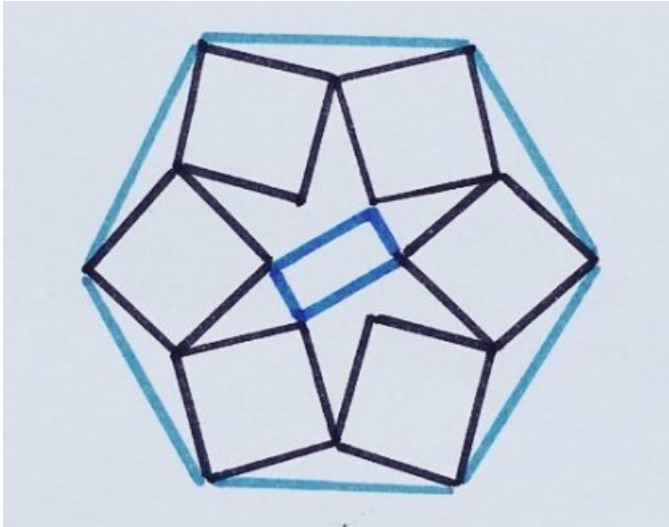"Another one of my favourites."

15. Jewel Cutters

Four equilateral triangles are arranged around a square which has area 12. **What's the shaded area?**

"The best thing about this one: the really nice dissection solutions that were posted."
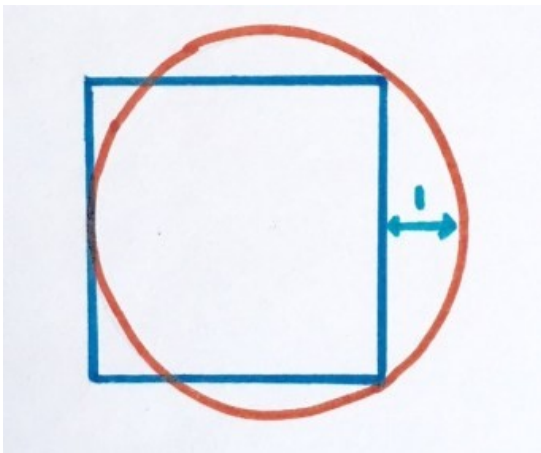
16. Going, Going, 'gon

Six identical squares and a smaller rectangle are fitted into this regular hexagon. **What fraction of the hexagon do they cover?**

"This one isn't so neat, but the answer really surprised me. I think because it's harder it didn't get so much traction on twitter!
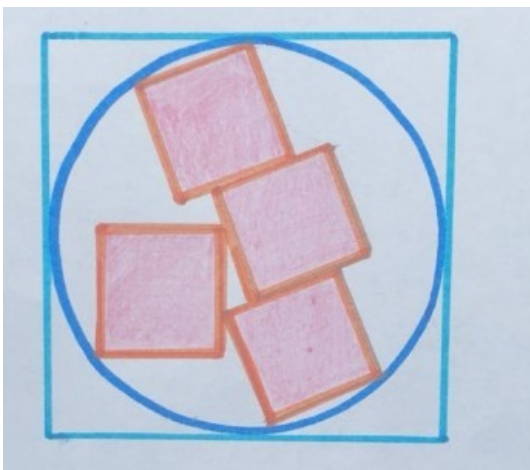
17. Just One Fact

What's the area of the square?

"This is one of my favourites, as it just doesn't look like there's enough information."
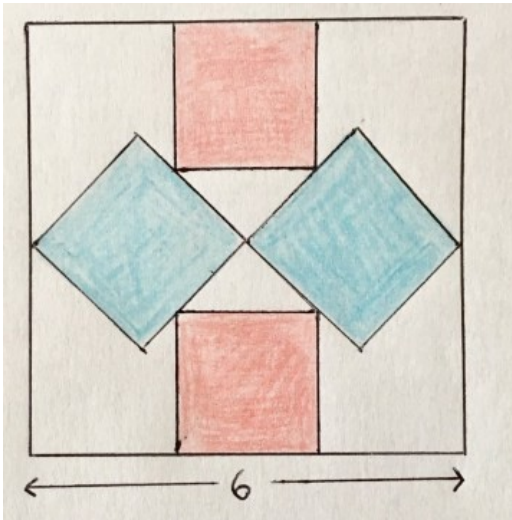
18. The Tumble Dryer

What fraction of the big square is shaded?

"I like the higgledy-piggledy squares here, like they're rattling around in a tumble dryer. And the answer is surprisingly neat too."
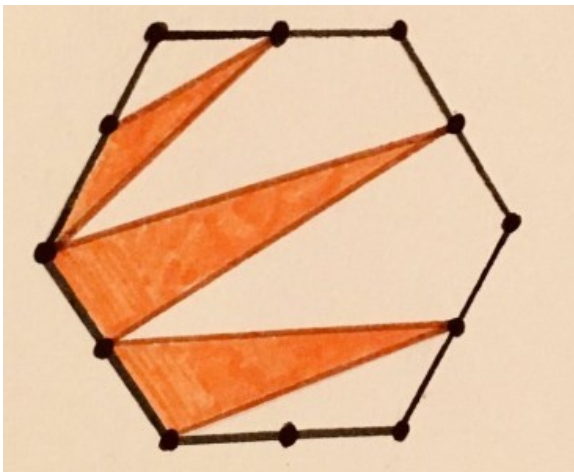
19. Fly the Flags

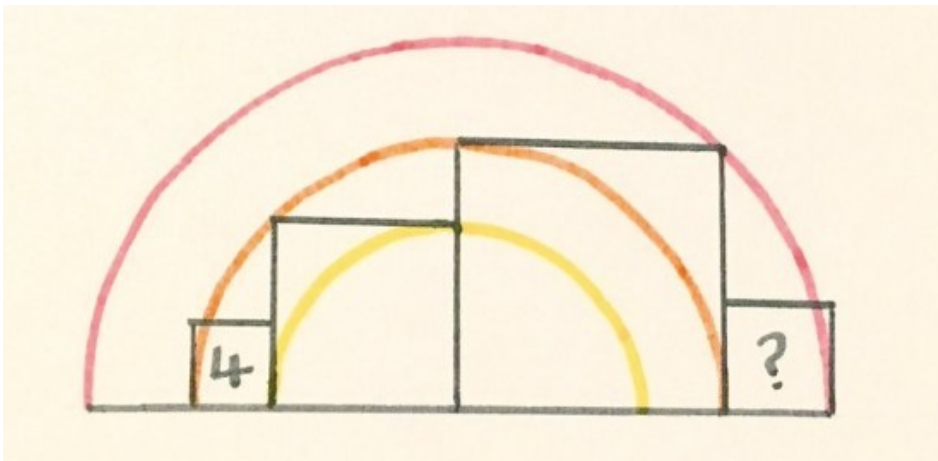Squares of the same colour are the same size. **What's the total shaded area?**

"This one's quite simple, once you see it – but I didn't straight away so the simplicity of the answer surprised me."

20. The Tiger-gon

What fraction is shaded? The hexagon is regular, with equally spaced dots around its perimeter.

"This one I nearly didn't post. But the picture reminded me of Tony the Tiger."

BONUS: Sunset Over Square City

The leftmost square has area 4. **What's the area of the square on the right?**

"I like this one because it reminds me of a sunrise over a city of squares."