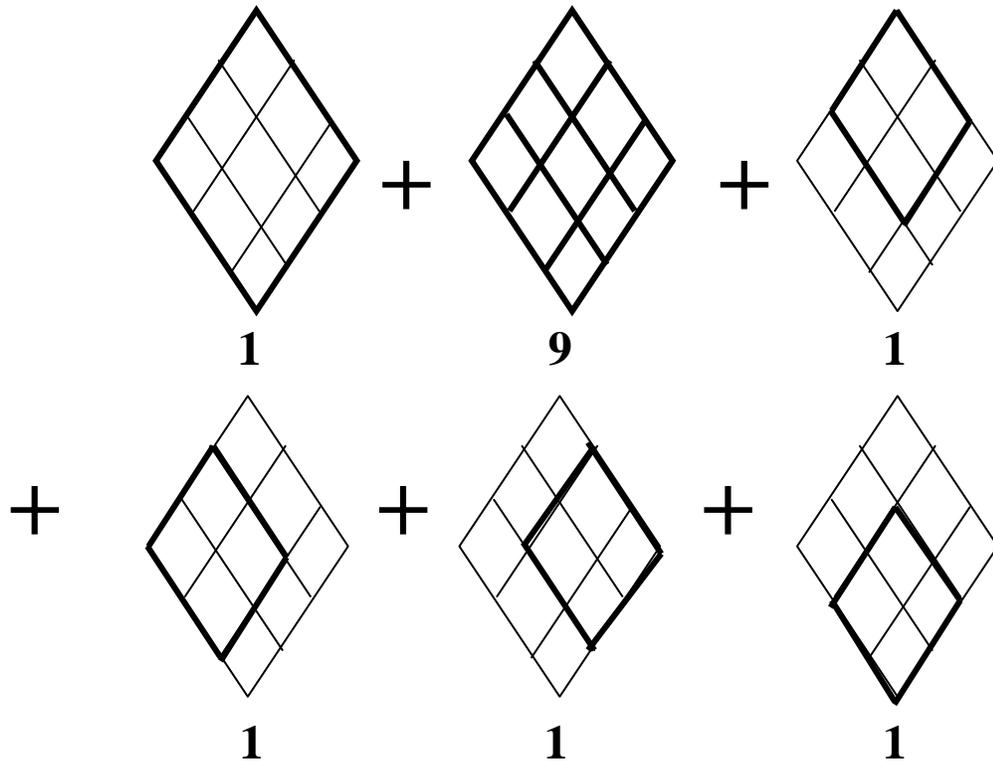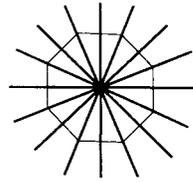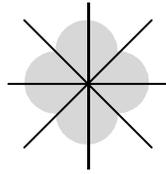# Key Stage 3 Maths Trail Answers

1   Depends on current prices

2   Saturday   Seven times table and days in the months: essential knowledge

3   Depends   Temperature and humidity will vary. Note that the vegetation in the Subtropical House grows normally in temperatures that range from 10 to 27°C

4   South East

5   Around 61   Judged by eye, as semi-circle of outer bricks appeared to contain 30 ½. Hence 30 ½ x 2

6   276   6 layers of bricks, 46 bricks in the top layer, hence 46 x 6

7   14

1 + **9** + **1**

+ **1** + **1** + **1**

8   These are two possibilities:
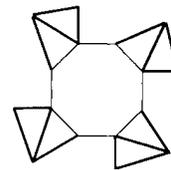

9   Both answers are 90°

10   Including rectangles and triangles. The students could try to identify the types of triangles to extend this question

11   Including squares, rectangles and triangles. Note symmetry in the patterns

12   26   This is really best done back in the classroom, on multiple copies of the court markings. A popular answer is 10, but this doesn't allow for all the possible rectangle combinations.

13   The answer will be the current year minus 1982.

14   Any net will work that combines an octagon with 8 isosceles triangles as long as each triangle's base will fold onto, or is attached to, only one octagon edge. For example:

15   C=500cm
D=154cm
Both approximate hence:
C – D=3.25

The main purpose is to get a rough value for pi: maybe then see if the same thing happens with other circles. Hence, you might be satisfied with: C=nearly 17 A4 sheet lengths D=5 and a bit A4 sheet lengths, which gives a 'pi' of about 3.3.

Please note:

These are not always hard and fast. Prices change, temperatures change and some questions depend on debate. But best of all, you and your pupils may have your own ideas about how to tackle a particular question.

If you don't already have a maths trail around your own school grounds or locality, then we hope that this trail gives you some ideas.

Meanwhile, enjoy the Botanical gardens trail and may the sun shine on you!

THE BIRMINGHAM
BOTANICAL
GARDENS
TURN OVER A NEW LEAF