1. What is the value of $1/25 + 0.25$?
   (Your answer can be in either fraction or decimal form.)

2. A rectangle is presented with its two diagonals and also a straight line connecting the midpoint of one side to the midpoint of the opposite side. How many triangles are there in the figure?

3. Which one of the whole numbers 312, 316, 320, 324, 328 has an odd number of (positive) factors?

4. Twelve squares are drawn as a grid of four columns by three rows on a piece of card. The squares in the top row are labelled X,X,C,D (from left to right), the middle row A,Z,B,X, and the bottom row X,X,E,X. Then the squares labelled X are cut away, leaving the net of a cube. When the net is folded to make the cube, the face labelled with which letter is opposite the face labelled Z?

5. If all the whole numbers from 1 to 99 are multiplied together, what is the second-to-last digit of the result?

6. A square is divided into five 'parallel' rectangles of equal width. The first, third, and fifth rectangles are coloured blue, and the second and fourth rectangles are coloured red. What proportion of the perimeter of the square is coloured red?

7. On standard dice the total number of pips on each pair of opposite faces is seven. A standard die is stacked on top of another such that the total number of pips on the two touching faces is five. What is the total number of pips on the top and bottom faces of the stack?

8. A rectangle has its corners labelled P,Q,R,S in clockwise order. Point T is on side PQ, and is located such that the line ST is *perpendicular* to the line RT. The lengths of ST and RT are 4 and 2 units respectively. What is the area (in square units) of the rectangle?

9. A 5 x 5 grid has the letter B in its centre cell, the letter G in all sixteen edge and corner cells, and the letter O in all eight remaining cells. Starting at the centre cell, moving from one cell to the next either orthogonally (across a common edge) or diagonally (through a common corner), how many different routes are there which spell "BOG"?

10. An active sphagnum bog deposits about one metre of peat every one thousand years. To one significant figure, how many millimetres is that per day?

11. Usain runs twice as fast as his mum. His mum runs five times as fast as his pet tortoise, Turbo. They all set off together for a run down the same straight path. When Usain has run 100 metres, how far apart are his mum and Turbo the tortoise?

12. A line has five equally-spaced points on it, marked A,B,C,D,E. The line is rotated three times through a half-turn, first about A, then about B, and finally about E. Just one of the five points finishes in the same position as it started. Which one?

13. Six friends are having dinner together in their local restaurant. The first eats there every day, the second eats there every other day, the third eats there every third day, and so on up to and including the sixth. They agree to have a party the next time they all eat there together. In how many days' time is the party?

14. Granny swears that she is getting younger. She has calculated that she is four times as old as I am now, but remembers that five years ago she was five times as old as I was then. How old is Granny?

15. In how many different ways can a row of five "on/off" switches be set so that no two adjacent switches are in the "off" position?

16. The corners of an equilateral triangle are the midpoints of alternate sides of a regular hexagon. What proportion of the area of the hexagon is enclosed by the triangle?

17. How many of the following four statements are true?
    A. "None of these statements is true."
    B. "Precisely one of these statements is true."
    C. "Precisely two of these statements are true."
    D. "All of these statements are true."

18. The pages of a book are numbered in the usual way (incrementally and starting at 1). In total, it takes 852 digits to number all the pages of the book. What is the number of the last page?

19. After playing 500 games, my success rate at Spider Solitaire is 49%. Assuming I win every game from now on, how many extra games do I need to play to boost my success rate to 50%?

20. Two adults and two children wish to cross a river. They make a raft, but it will carry only the weight of one adult or two children. The raft cannot cross the river without at least one person on board. What is the minimum number of times the raft must cross the river to get all four people to the other side?