1. What is the 1111th decimal digit in $\frac{2}{3}$?

2. What is the 2222th decimal digit in $\frac{17}{99}$?

3. What is the 3333th decimal digit in $\frac{13}{37}$?

4. If $\frac{1}{1+x} = 5$ and $\frac{1}{1-y} = \frac{1}{5}$, what is $\frac{1}{x+y}$?

5. What is $1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \cdots$?

6. Four students are chosen for the team. In how many ways can the three starters be chosen?

7. Suppose d is a digit. For how many values of d is $2.00d5 > 2.005$?

8. I walked $\frac{1}{2}$ mile south, then $\frac{3}{4}$ mile east, and finally $\frac{1}{2}$ mile south. How many miles am I, in a direct line, from my starting point?

9. A group of children riding on bicycles and tricycles rode past my house. I counted 7 children and 19 wheels. How many tricycles were there?

10. The year 2002 is a palindrome (a number that reads the same from left to right as it does from right to left). What is the product of the digits of the next year after 2002 that is a palindrome?

11. The digits 1, 2, 3, 4 and 9 are each used once to form the smallest possible even five-digit number. What is the digit in the tens place?

12. Each principal of my high school serves exactly one 3-year term. What is the maximum number of principals my school could have during an 8-year period?

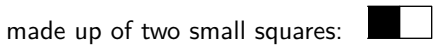
13. What is the degree measure of the smaller angle formed by the hands of a clock at 10 o'clock?

14. What is $1234^2 - 2 \cdot 1234 \cdot 1233 + 1233^2$?

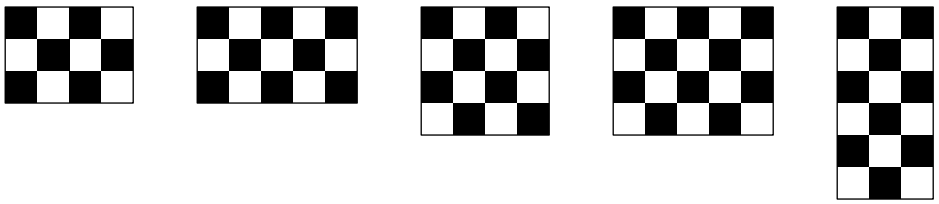
15. My friend has 3 sisters and 5 brothers. His sister has X sisters and Y brothers. What is the product of X and Y?

16. For how many positive integer values of N is the expression $\dfrac{36}{N+2}$ an integer?

17. If $991 + 993 + 995 + 997 + 999 = 5000 - N$, then $N =$

18. A "domino" is made up of two small squares: 

    Which of the "checkerboards" illustrated below CANNOT be covered exactly and completely by a whole number of non-overlapping dominoes?



19. When three different numbers from the set $\{-3, -2, -1, 4, 5\}$ are multiplied, the largest possible product is

20. What is the least common multiple of the first 10 positive integers?

21. What is $\left(1 - \frac{1}{2}\right)\left(1 - \frac{1}{3}\right)\left(1 - \frac{1}{4}\right)\ldots\left(1 - \frac{1}{10}\right)$

22. The sides of a triangle have lengths 6.5, 10, and s, where s is a whole number. What is the smallest possible value of s?

23. In a mathematics contest with ten problems, a student gains 5 points for a correct answer and loses 2 points for an incorrect answer. If I answered every problem and her score was 29, how many correct answers did I have?

24. A shop advertises everything is "half price in today's sale." In addition, a coupon gives a 20% discount on sale prices. Using the coupon, the price today represents what percentage off the original price?

25. What is the units digit of 13^{2012}

26. A square with integer side length is cut into 10 squares, all of which have integer side length and at least 8 of which have area 1. What is the smallest possible value of the length of the side of the original square?

27. A fair coin is tossed 3 times. What is the probability of at least two consecutive heads?