



6. The numbers 5, 6, 7, 8, 9, 10 are to be placed, one in each of the circles in the diagram, so that the sum of the numbers in each pair of touching circles is a prime number. The number 5 is placed in the top circle.



Which number is placed in the shaded circle?

- A 6 B 7 C 8 D 9 E 10

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6. E The prime numbers which are the sums of pairs of numbers in touching circles are all odd as they are greater than 2. This means that any two adjacent circles in the diagram must be filled with one odd number and one even number. The number 10 may not be placed on either side of 5, since $10 + 5 = 15 = 3 \times 5$. So either side of the 5 must be 6 and 8. Below 6 and 8 must be 7 and 9 respectively leaving 10 to be placed in the shaded circle at the bottom.