10. Consider all three-digit numbers formed by using *different* digits from 0, 1, 2, 3 and 5. How many of these numbers are divisible by 6?

A 4 B 7 C 10 D 15 E 20

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10. B A number is a multiple of 6 precisely when it is both a multiple of 2 and of 3. To be a multiple of 2, it will need to end with an even digit; i.e. 0 or 2. If it ends with 0, the sum of the other two digits must be a multiple of 3; and only $3 = 1 + 2$ or $6 = 1 + 5$ are possible. That gives the numbers 120, 210, 150, 510. If it ends with 2, the sum of the others must be $1 = 0 + 1$ or $4 = 1 + 3$. That gives 102, 132 and 312.