UNIT 15 QUESTIONS 16-20

NUMARECY

2012A

17. Let S be a subset of $\{1, 2, 3, \ldots, 30\}$ with the property that no pair of distinct elements in S has a sum divisible by 5. What is the largest possible size of S?

(A) 10 **(B)** 13 **(C)** 15 **(D)** 16 **(E)** 18

2016A

18. For some positive integer n, the number $110n^3$ has 110 positive integer divisors, including 1 and the number $110n^3$. How many positive integer divisors does the number $81n^4$ have?

(A) 110 **(B)** 191 **(C)** 261 **(D)** 325 **(E)** 425