2006 Q11

11. How many two-digit numbers have digits whose sum is a perfect square?

(A) 13 (B) 16 (C) 17 (D) 18 (E) 19

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2016 Q11

11. Determine how many two-digit numbers satisfy the following property: When the number is added to the number obtained by reversing its digits, the sum is 132.

(A) 5 (B) 7 (C) 9 (D) 11 (E) 12

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1995 Q12

12. A *lucky* year is one in which at least one date, when written in the form month/day/year, has the following property: *The product of the month times the day equals the last two digits of the year.* For example, 1956 is a lucky year because it has the date 7/8/56 and $7 \times 8 = 56$. Which of the following is NOT a lucky year?

(A) 1990 (B) 1991 (C) 1992 (D) 1993 (E) 1994

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1991 Q12

12. If $\frac{2+3+4}{3} = \frac{1990+1991+1992}{N}$, then $N =$

(A) 3 **(B)** 6 **(C)** 1990 **(D)** 1991 **(E)** 1992

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2003 Q12

12. When a fair six-sided die is tossed on a table top, the bottom face cannot be seen. What is the probability that the product of the numbers on the five faces that can be seen is divisible by 6?

(A) $\frac{1}{3}$ **(B)** $\frac{1}{2}$ **(C)** $\frac{2}{3}$ **(D)** $\frac{5}{6}$ **(E)** 1

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1992 Q12

12. The five tires of a car (four road tires and a full-sized spare) were rotated so that each tire was used the same number of miles during the first 30,000 miles the car traveled. For how many miles was each tire used?

(A) 6000 **(B)** 7500 **(C)** 24,000 **(D)** 30,000 **(E)** 37,500

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

(A) 1 **(B)** 3 **(C)** 5 **(D)** 7 **(E)** 9

2012 Q12

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2017 Q12

12. The smallest positive integer greater than 1 that leaves a remainder of 1 when divided by 4, 5, and 6 lies between which of the following pairs of numbers?

(A) 2 and 19 **(B)** 20 and 39 **(C)** 40 and 59

(D) 60 and 79 **(E)** 80 and 124

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2013 Q13

13. When Clara totaled her scores, she inadvertently reversed the units digit and the tens digit of one score. By which of the following might her incorrect sum have differed from the correct one?

(A) 45 **(B)** 46 **(C)** 47 **(D)** 48 **(E)** 49

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1986 Q14

14. If $200 \leq a \leq 400$ and $600 \leq b \leq 1200$, then the largest value of the quotient $\frac{b}{a}$ is

A) $\frac{3}{2}$ B) 3 C) 6 D) 300 E) 600

1991 Q14

14. Several students are competing in a series of three races. A student earns 5 points for winning a race, 3 points for finishing second and 1 point for finishing third. There are no ties. What is the smallest number of points that a student must earn in the three races to be guaranteed of earning more points than any other student?

(A) 9 **(B)** 10 **(C)** 11 **(D)** 13 **(E)** 15

2010 Q14

14. What is the sum of the prime factors of 2010?

(A) 67 **(B)** 75 **(C)** 77 **(D)** 201 **(E)** 210

2015 Q14

14. Which of the following integers cannot be written as the sum of four consecutive odd integers?

(A) 16 **(B)** 40 **(C)** 72 **(D)** 100 **(E)** 200

2000 Q14

14. What is the units digit of $19^{19} + 99^{99}$?

(A) 0 **(B)** 1 **(C)** 2 **(D)** 8 **(E)** 9

2007 Q15

15. Let a, b and c be numbers with $0 < a < b < c$. Which of the following is impossible?

(A) $a + c < b$ **(B)** $a \cdot b < c$ **(C)** $a + b < c$ **(D)** $a \cdot c < b$ **(E)** $\frac{b}{c} = a$

2012 Q15

15. The smallest number greater than 2 that leaves a remainder of 2 when divided by 3, 4, 5, or 6 lies between what numbers?

(A) 40 and 50 **(B)** 51 and 55 **(C)** 56 and 60 **(D)** 61 and 65

(E) 66 and 99

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2011 Q15

15. How many digits are in the product $4^5 \cdot 5^{10}$?

(A) 8 **(B)** 9 **(C)** 10 **(D)** 11 **(E)** 15

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2013 Q15

15. If $3^p + 3^4 = 90$, $2^r + 44 = 76$, and $5^3 + 6^s = 1421$, what is the product of p, r, and s?

(A) 27 **(B)** 40 **(C)** 50 **(D)** 70 **(E)** 90

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2016 Q15

15. What is the largest power of 2 that is a divisor of $13^4 - 11^4$?

(A) 8 **(B)** 16 **(C)** 32 **(D)** 64 **(E)** 128