GMAT QUANT PRACTICE PAPER

1.

r	s	t
u	v	w
x	y	z

Each of the letters in the table above represents one of the numbers 1, 2, or 3, and each of these numbers occurs exactly once in each row and exactly once in each column. What is the value of r?

(1) v + z = 6
(2) s + t + u + x = 6

2.

×	a	b	c
a	d	e	f
b	e	g	h
c	f	h	j

Each entry in the multiplication table above is an integer that is either positive, negative, or zero. What is the value of a ?

(1) $h \neq 0$
(2) c = f

3. Of the numbers q, r, s, and t, which is greatest?

(1) The average (arithmetic mean) of q and r is s.
(2) The sum of q and r is t.

4. At a particular store, candy bars are normally priced at $1.00 each. Last week, the store offered a promotion under which customers purchasing one candy bar at full price could purchase a second candy bar for $0.50. A third candy bar would cost $1.00, a fourth would cost $0.50, and so on.

If, in a single transaction during the promotion, Rajiv spent D dollars on N candy bars, where D and N are integers, is N odd?

(1) D is prime.

(2) D is not divisible by 3.

5. If x is a two-digit prime number whose digits are the reverse of the two-digit prime number y, what is the value of x?

   (1) x –y = 54

   (2) x + y = 88

6. On a certain week, 950 visitors chose one of weekdays from Monday through Sunday to visit a pagoda. If twice as many visitors chose Monday than Tuesday, did at least 100 visitors choose Sunday?

   (1) None of the weekdays was chosen by more than 150 visitors.
   (2) None of the weekdays was chosen by fewer than 75 visitors.

7. If nn is a non-zero integer, is 2n2+n+1n2n2+n+1n an integer?

   (1) 4 is divisible by nn
   (2) nn is an even integer

8. Is m + z > 0?

   (1) m - 3z > 0
   (2) 4z - m > 0

9. If x and y are integers and xy ≠ 0, is x - y > 0?

   (1) x/y < 1/2

   (2) \(\sqrt{x^2}= x\) and \(\sqrt{y^2} = y\)

10. If x and y are integers, and xy < 0, what is the value of x?

Statement 1: Five times the value of x is 17 more than 3 times the value of y
Statement 2. x is a perfect square

11. If x is a positive integer, what is the value of \(\sqrt{x+24}-\sqrt{x}\)?

   (1) \(\sqrt{x}\) is an integer
   (2) \(\sqrt{x+24}\) is an integer

12. If x ≠ y, does \(\frac{x}{y - x}=1\)?

   (1) \(|x| = x - y\)
   (2) \(x^3 < 0\)

13. If n is an integer, is n positive?

   (1) (2n + 1)/(n + 1) is an integer

(2) n = −n

14. A and B work at digging a ditch alternately for a day each. If A can dig a ditch in 'a' days alone and B can dig a ditch in 'b' days alone. Will work be done faster if A begins the work?

    1. n is a positive integer such that n[(\(\frac{1}{a})+(\frac{1}{b}\))] = 1
    2. b>a

15. The first four digits of the six-digit initial password for a shopper's card at a certain grocery store is the customer's birthday in day-month digit form. For example, 15 August corresponds to 1508 and 5 March corresponds to 0503. The 5th digit of the initial password is the units digit of seven times the sum of the first and third digits, and the 6th digit of the initial password is the units digit of three times the sum of the second and fourth digits. What month, and what day of that month, was a customer born whose initial password ends in 16 ?

    (1) The customer's initial password begins with 21, and its fourth digit is 1.
    (2) The sum of the first and third digits of the customer's initial password is 3, and its second digit is 1.

16. If y is an odd integer and the product of x and y equals 222, what is the value of x?

    (1) x is a prime number.

    (2) y is a 3 digit number.

17. A ball drops from a certain height. The height it will reach after rebounding from the floor is 80 percent of the previous height. The total travel is 3,104cm when it touches the floor on the third time. What is the value of the original height, in cm?

    A. 400cm
    B. 500cm
    C. 600cm
    D. 700cm
    E. 800cm

18. In a sequence $b_1, b_2, b_3 b_1, b_2, b_3$, . . . in which $b_1 b_1$ is the first term, $b_1 = 8 b_1 = 8$, and for all integers $n > 1, b_n n > 1, b_n = (-1)^{n-1}(b_{n-1} - 1)(-1)n-1(bn-1-1)$. What is the sum of the first 43 terms of this sequence?

    A) 1

    B) 13

    C) 21

    D) 29

    E) 43

19. How many five-digit positive integers can be formed using each of the digits from {1, 2, 3, 5} at least once such that they are a multiple of 15?

    A. 36
    B. 24
    C. 18
    D. 15
    E. 12

20. What is the remainder when X^Y is divided by Z , Where X = 32, Y = (32)^(32) and Z = 13?
    a) 4
    b) 5
    c) 6
    d) 7
    e) 8
21. In a sequence, each term after the first term a_1 is equal to the preceding term plus a constant d. If $a_7=7$ and $a_8=78$, what is the value of a_{11}

    (A) $(2)(3)(77)$
    (B) $(23)(3)(77)$
    (C) $(23)(3)(77)$
    (D) $(52)(77)$
    (E) 7^{11}
22. A paint that is sold only in gallon containers covers 200 square feet per gallon of paint. How many gallons of the paint must be purchased to cover the walls of an auditorium that is 40 feet long, 25 feet wide, and 12 feet high if the areas of the windows and doors are ignored?

    A. 4
    B. 8
    C. 16
    D. 32
    E. 60
23. A certain investment grows at an annual interest rate of 16 percent, compounded quarterly. Which of the following equations can be solved to find the number of years, x, that it would take for the investment to increase by a factor of 81?

    A) $81=1.16^{4x}$
    B) $81=1.04^{x}$
    C) $3=1.16^{x}$
    D) $3=1.04^{4x}$
    E) $3=1.04^{x}$
24. A car traveling at a certain constant speed takes 2 seconds longer to travel 1 kilometer than it would take to travel 1 kilometer at 75 kilometers per hour. At what speed, in kilometers per hour, is the car traveling?

    A. 71.5
    B. 72
    C. 72.5
    D. 73
    E. 73.5

25. If a < b < c , which of the following must be true?

    (I) a < b^2
    (II) b − a < c
    (III) a^2 < b^2 < c^2

    A. None
    B. I only
    C. II only
    D. III only
    E. II and III
26. Which of the following equations give a circle tangent to y-axis at (0, 2) and having the distance between x-intercepts equal to 3 units?

    I. $x^2 + y^2 + 5x - 4y + 4 = 0$

    II. $x^2 + y^2 - 5x - 4y + 4 = 0$

    III. $x^2 + y^2 - 5x - 4y + 1 = 0$

    A. I only
    B. II only
    C. III only
    D. I and II only
    E. I, II and III
27. If $2^x = 3$, then which of the following must be true?

    A. $1 \frac{1}{3} < x < 1 \frac{1}{2}$

    B. $1 \frac{1}{2} < x < 1 \frac{2}{3}$

    C. $1 \frac{2}{3} < x < 1 \frac{3}{4}$

    D. $1 \frac{3}{4} < x < 1 \frac{5}{6}$

    E. $1 \frac{5}{6} < x < 2$
28. Set S contains all the integers from 10 to 99. S_1, a subset of S, contains all the numbers of S, in which both the digits are even. S_2, also a subset of S, contains all the numbers of S, in which both the digits are odd. What is the ratio of sum of all elements in S_1 to sum of all elements in S_2?

29. **A.** $\frac{108}{275}$

B. $\frac{216}{275}$

C. $\frac{2}{3}$

D. $\frac{275}{216}$

E. $\frac{3}{2}$

30. For any given x and any positive integer n, the nth term in sequence S is defined by the equation $S_n(x) = x^{(2n-1)}$. The product of all terms in sequence S from $S_1(x)$ through $S_k(x)$ for any positive integer k is equal to x raised to what power?

(A) k
(B) 2k – 1
(C) 2k
(D) (k^2+ 1)/2
(E) k^2