SAT Math – I

Time to answer all questions – 25 minutes

20 questions

Directions: For each of the questions given below, solve the problem and choose the best answer.

Notes:

1. You may use the calculator
2. All number are real numbers
3. Figures in this test are drawn accurately EXCEPT when stated in the question that figure is not drawn to scale
4. Unless otherwise specified, the domain of any function *f* is assumed to be the set of all real numbers x for which *f(x)* is a real number

1. If $20+x$ is 8 more than 12, what is the value of $5x$?
   (A) -5
   (B) -1
   (C) 0
   (D) 20
   (E) 50

2. The result when a number is divided by 9 is equal to the result when that same number is divided by 36. What is that number?
   (A) -9
   (B) -18
   (C) 0
   (D) 18
   (E) 36

3. How many minutes are there in h hours and m minutes?

   (A) h/60 + m
   (B) (h + m)/ 60
   (C) 60h + m
   (D) 60(h + m)
   (E) h + 60m

4. The complete cycle of a traffic light takes 110 seconds. During each cycle, the light is red for 60 seconds, yellow for 10 seconds, and green for 40 seconds. At a randomly chosen time, what is the probability that the light will not be green?

   (A) 7/18
   (B) 4/9
   (C) 17/18
   (D) 7/9
   (E) 7/11

5. A six-sided die numbered 1 through 6 is rolled four times to generate a four-digit number. The outcome of the first roll becomes the units digit of the four-digit number, the outcome of the second roll becomes the tens digit of the four-digit number, the outcome of the third roll becomes the hundreds digit of the four digit number, and the outcome of the fourth roll becomes the thousands digit of the four-digit number. How many four-digit numbers with four distinct digits can be generated by this method?

   (A) 120
   (B) 360
   (C) 216
   (D) 438
   (E) 666

6. Five equal squares are placed side by side to make a single rectangle whose perimeter is 372 feet. What is the area of one of these squares in square feet?

   (A) 961
   (B) 983
   (C) 1007
   (D) 1029
   (E) 1860

7. A number x divided by 8 has a remainder of 3. Which of the following divided by 8 has a reminder of 6?

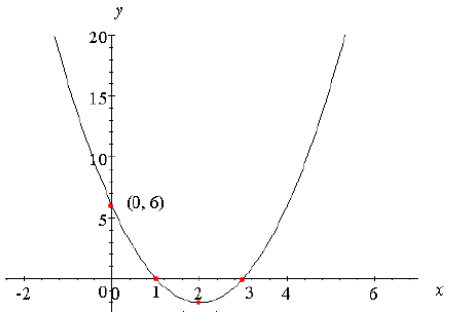
   (A) $x - 6$
   (B) $x - 5$
   (C) $x - 4$
   (D) $x - 3$
   (E) $x - 2$

8. A restaurant ordered $1,050 worth of cups and plates. Each cup costs $2 while each plate costs $3. If twice as many cups as plates were ordered, how many cups and plates were ordered altogether?

   (A) 360
   (B) 390
   (C) 420
   (D) 450
   (E) 480

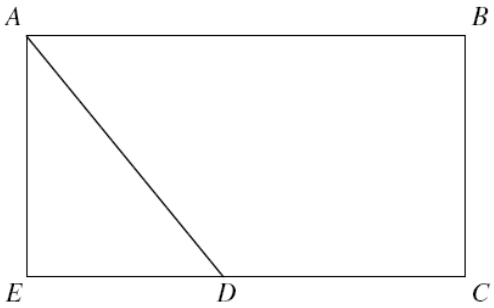
9. If $y=4x^3/z$, what happens to the value of y when x and z are tripled?

   (A) y is not changed
   (B) y is halved
   (C) y is doubled
   (D) y is tripled
   (E) y is multiplied by 9



10. The figure above shows the graph of a quadratic function f that has a minimum at point (2, -2). If f(a) = f(4), which of the following could be the value of a?

(A) -2
(B) -1
(C) 0
(D) 1
(E) 3



11. In rectangle ABCE, measure of angle EAD is 4/5 of measure of angle ADE. What is the sum of the measures of angle ADC and angle ABC?

(A) 220 deg.
(B) 230 deg.
(C) 240 deg.
(D) 255 deg.
(E) 265 deg.

12. What is the domain of the function xf (x)=7/4-X

(A) $x < -4$ or $0 < x < 4$
(B) $x \leq -4$ or $x \geq 4$
(C) $x < 0$ or $x > 0$
(D) All integer values of x
(E) $x \neq 4$

13. A rectangle and a square have equal perimeters. If the rectangle has width 8 and length 12, what is the area of the square?

(A) 10
(B) 40
(C) 48
(D) 96

(E) 100

14. If 2a + 6b = 16 and a + 3b + c = 12, what is the value of c?

(A) –4
(B) 4
(C) 8
(D) 28
(E) It cannot be determined from the given information.

15. The equation $2\sqrt{x} - 3 = 5$ is true for which value of x?

(A) 0
(B) 4
(C) 9
(D) 16
(E) 25

16. Xena bought a new refrigerator costing $625. She paid $100 as a down payment and will pay the remainder $75 per month. How many months will it take for Xena to pay off her new refrigerator?

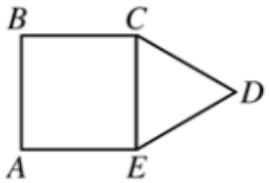
(A) 4
(B) 5
(C) 6
(D) 7
(E) 9

17. If x is an odd integer and y is an even integer, which of the following must be an even integer?
I. xy
II. (x + 2)(y – 5)
III. y^x

(A) I only
(B) II only
(C) III only
(D) I and II only
(E) I and III only

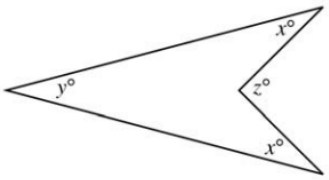
18. In the figure provided, CDE is an equilateral triangle and ABCE is a square with an area of 1. What is the perimeter of polygon ABCDE ?

(A) 4
(B) 5
(C) 6
(D) 7
(E) 8



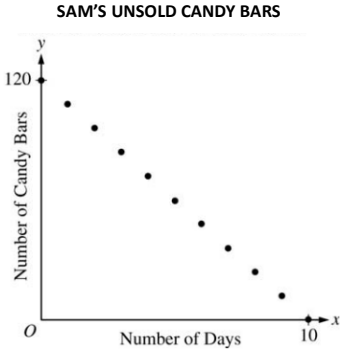
19. If x = 20 and y = 30 in the figure on the right, what is the value of z?

(A) 60
(B) 70
(C) 80
(D) 90
(E) 100



20. The graph above shows the number of Sam's unsold candy bars over a 10-day period. The pointson the graph all lie on which of the following lines?

(A) y = 10 x - 120
(B) y = 10 x + 120
(C) y = 12 x - 120
(D) y = 120 - 10 x
(E) y = 120 - 12 x



Answers:

1. C
2. C
3. C
4. E
5. B
6. A
7. B
8. D
9. E
10. C
11. A
12. E
13. E
14. B
15. D
16. D
17. E
18. B
19. B
20. E