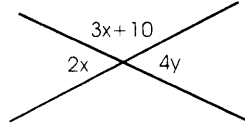


1. Which of the following cannot be the sum of 3 consecutive integers?
 (A) - 4080
 (B) 12144
 (C) 32736
 (D) 97292
 (E) 103776



2. From the figure above, find the value of y .
 (A) 22
 (B) 20
 (C) 19
 (D) 18
 (E) 17
3. If x and y are odd numbers, which of the following **must** be odd?
 (A) $x + y$
 (B) $x - y$
 (C) xy
 (D) $\frac{x}{y}$
 (E) $xy + \frac{x}{y}$
4. Which of the following is not a rational number?
 (A) $0.\overline{142857}$
 (B) 1.11%
 (C) 1.2×10^{2001}
 (D) $2^{\frac{1}{2}}$
 (E) 2^{-2}
5. If Simon sold an item for \$120 after losing 20% of the cost, how much was the discount?
 (A) \$20
 (B) \$24
 (C) \$30
 (D) \$35
 (E) \$40
6. Which statement is not true?
 (A) A square is a parallelogram.
 (B) A rhombus is a parallelogram.
 (C) A rectangle is a parallelogram.
 (D) A trapezoid is a parallelogram.
 (E) A square is a rectangle.

7. Two sides of a triangle are 2 cm and 5 cm long. Which of the following could be the length of the third side?
 (A) 1 cm
 (B) 2 cm
 (C) 2.5 cm
 (D) 3 cm
 (E) 4 cm
8. If x, y, z are consecutive odd integers and their sum is 27. What is their product xyz ?
 (A) 720
 (B) 693
 (C) 990
 (D) 1287
 (E) 1485
9. If $x = (-1) + (-1) - (-1)$, $y = (-1)(-1)(-1)$, what is the value of $(x - y)$?
 (A) -2
 (B) -1
 (C) 0
 (D) 1
 (E) 2
10. How many even integer values of x are there in the range: $-4 < x \leq 4$?
 (A) 9
 (B) 8
 (C) 5
 (D) 4
 (E) 3
11. If $2^{10} = 1024$, how many kilobytes are there in 25×2^{10} bytes?
 (1 kilobyte = 1000 bytes)
 (A) 24
 (B) 25
 (C) 25.6
 (D) 26
 (E) 26.5
12. If $\frac{2}{9}$ of a number is 20, then what is $\frac{1}{3}$ of this number?
 (A) 30
 (B) 60
 (C) 90
 (D) 180
 (E) 270

$$13. \frac{2}{7} \div 1 \frac{1}{3} \times \frac{1}{2} - \frac{1}{2} \div \frac{1}{2} =$$

(A) $-\frac{25}{28}$

(B) $-\frac{11}{14}$

(C) 0

(D) $\frac{3}{14}$

(E) $-\frac{4}{7}$

14. In a right triangle, the hypotenuse is $2\sqrt{2}$ and one of the legs is 2. Find the area of this triangle.

(A) $\sqrt{3}$

(B) $\sqrt{2}$

(C) 2

(D) 1

(E) 4

15. In a high school, the number of girls makes up 20% of all the students. How many girls are there if there are 800 boys in the school?

(A) 120

(B) 140

(C) 160

(D) 180

(E) 200

Donation chart				
Money(\$)	\$100	\$75	\$50	\$25
No. of people	20	15	20	25

16. What is the average donation per person in dollars from the chart shown?

(A) \$59.38

(B) \$57.53

(C) \$45.63

(D) \$12.57

(E) \$3.13

17. The ratio of girls to boys in SSHAT class is 4 : 5. If there are 5 more boys than girls, which of the following is the number of students in this class?

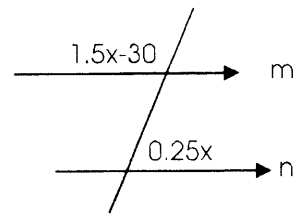
(A) 9

(B) 18

(C) 45

(D) 90

(E) 180



18. In the diagram shown, lines $m \parallel n$. Find the value of x .

(A) 24°

(B) 32°

(C) 78°

(D) 105°

(E) 120°

19. For all integers x and y , $x @ y = \frac{x+y}{x-y}$,

find the value of

$$\frac{(0.5 @ 0.2) + (0.6 @ 0.4)}{(0.5 @ 0.2) - (0.6 @ 0.4)}$$

(A) $3\frac{1}{3}$

(B) $2\frac{2}{3}$

(C) $-3\frac{1}{2}$

(D) $-2\frac{3}{4}$

(E) $-1\frac{1}{5}$

20. The total measures of all the angles in a polygon equals $(n-2)180^\circ$, where n is the number of sides. If the average measure of an angle in a polygon is 140° , how many sides are there?

(A) 7

(B) 8

(C) 9

(D) 10

(E) 11

21. Fanny was three times as old as her younger sister 3 years ago. If her sister is 12 years old, how old is she now?

(A) 27

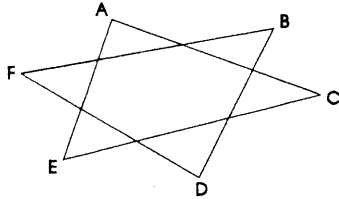
(B) 30

(C) 33

(D) 36

(E) 42

22. Every hour, Jennifer can sew 24 dresses while her mother can sew only 20 dresses. How long will it take them to sew 110 dresses together?
- (A) 1.5 hours
(B) 1.8 hours
(C) 2.0 hours
(D) 2.2 hours
(E) 2.5 hours
23. If one dozen eggs cost \$ x , how many eggs can be bought with 99 cents?
- (A) $\frac{12 \times 99}{x}$
(B) $\frac{12x}{99}$
(C) $\frac{12 \times 99}{100x}$
(D) $\frac{12 \times 99 \times 100}{x}$
(E) $\frac{12}{99 \times 100x}$
24. If a non-zero integer n is chosen such that $(2 - \frac{16}{n})$ is an integer less than 6, which of the following must be true of n ?
- (A) -8
(B) -6
(C) -4
(D) -3
(E) -1
25. If the temperature dropped from 4° to -8° one day in 2 hours, what percent of decrease was it?
- (A) 200%
(B) 300%
(C) 400%
(D) 800%
(E) 1200%
26. What is the largest possible area of a square cut out of a circle with radius 1 cm?
- (A) π cm²
(B) $\sqrt{2}$ cm²
(C) 2 cm²
(D) 1 cm²
(E) $\frac{\pi}{2}$ cm²
27. Express the ratio of 4 feet 4 inches to 6 feet 6 inches in simplest form.
- (A) 2 : 3
(B) 2.2 : 3.3
(C) 22 : 33
(D) 13 : 19
(E) 26 : 39
28. How many factors of 150 are prime numbers?
- (A) 8
(B) 4
(C) 3
(D) 2
(E) 1
29. Find the value of y in $\frac{40}{6y} = \frac{2}{3}$.
- (A) 0.2
(B) 0.1
(C) 0
(D) 5
(E) 10
30. If $\frac{x}{2}$ is subtracted from $\frac{2x}{3}$, the result is
- (A) $\frac{x}{6}$
(B) $\frac{x}{5}$
(C) x
(D) $\frac{x}{2}$
(E) $-\frac{x}{6}$
31. $2|3^2 - 5^2| - 3|(-3)^3 - 1| =$
- (A) 46
(B) 52
(C) -46
(D) -52
(E) -116
32. The scientific expression of the sum of 2.3×10^2 and 2.3×10^3 is
- (A) 4.6×10^2
(B) 4.6×10^3
(C) 2.53×10^2
(D) 2.53×10^3
(E) 2.323×10^1



33. In the above figure, find the sum of $\angle A + \angle B + \angle C + \angle D + \angle E + \angle F$.
- (A) 180°
 (B) 240°
 (C) 270°
 (D) 360°
 (E) cannot be determined

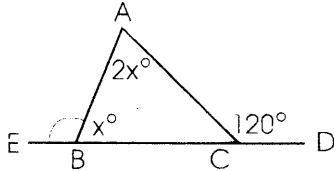
34. If 60 and 350 are factorized as follows:

$$60 = 3 \times 2 \times 2 \times 5$$

$$350 = 2 \times 5 \times 5 \times 7$$

Find the difference between their Least Common Multiple and Greatest Common Factor.

- (A) 1985
 (B) 2000
 (C) 2075
 (D) 2090
 (E) 2110



(figure not drawn to scale)

35. From the figure above, find $\angle ABE$.
- (A) 60
 (B) 80
 (C) 100
 (D) 120
 (E) 140
36. When 4 gallons of gasoline were removed from a uniform cylindrical tank, the gasoline level dropped from $\frac{5}{6}$ to $\frac{1}{3}$. What is the capacity of the tank when it is full?
- (A) 16 gallons
 (B) 14 gallons
 (C) 12 gallons
 (D) 10 gallons
 (E) 8 gallons

37. A bell rings after 1 minute, then waits 2 minutes to ring again, then waits another 3 minutes to ring again, then waits 4 minutes, 5 minutes, and so on. How many times does it ring in 1 hour?
- (A) 13
 (B) 12
 (C) 11
 (D) 10
 (E) 8

38. $83\frac{1}{3}\%$ of what number is 25?

- (A) 15
 (B) 30
 (C) 45
 (D) 50
 (E) 60

39. A motion is approved in the US Senate by 40 to 50. What percent of the votes are in favor of the motion?

- (A) 80%
 (B) 50%
 (C) $44\frac{4}{9}\%$
 (D) 40%
 (E) 35%

40. The average of a , b and c is 56. The average of b , c and d is 42. What is the value of $(a-d)$?

- (A) 98
 (B) 42
 (C) 36
 (D) 28
 (E) 14

41. If a line of slope 0.2 crosses the origin of x-y coordinate system and a point $(x, 20)$, find x .

- (A) 100
 (B) 10
 (C) 4
 (D) 0.1
 (E) 0.01

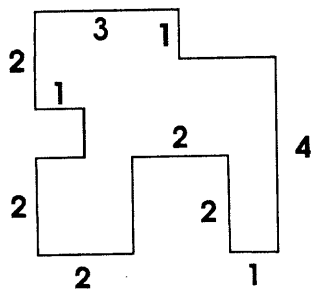
42. In a clock, what is the small angle between the hour hand and minute hand at 10:30?

- (A) 135°
 (B) 120°
 (C) 105°
 (D) 100°
 (E) 95°

43. In SSHSAT class, the ratio of boys to girls is 5 : 7. Which of the following can be the number of the students in the class?
 (A) 50
 (B) 70
 (C) 91
 (D) 132
 (E) 350

44. A store owner wants to make 20% profit and also wants to offer 20% discount to the customers. If a computer software costs \$100, what must be the selling price?
 (A) 100
 (B) 120
 (C) 130
 (D) 140
 (E) 150

45. Under the gravity, the distance that an object falls can be expressed as $d = \frac{1}{2}at^2$ where d is the distance, a is its acceleration and t is time. If time is twice as long on the planet where a is halved, the distance traveled will be multiplied by
 (A) 0.5
 (B) 1
 (C) $\sqrt{2}$
 (D) 2
 (E) 4



(figure is not drawn to scale)

46. Find the area of above figure. All the corners in the figure are 90 degrees angles.
 (A) 18
 (B) 20
 (C) 22
 (D) 25
 (E) Cannot be determined

47. A "Perfect Number" is defined as an integer equal to the sum of all of its distinct factors except itself. Which of the following is a "Perfect Number"?
 (A) 12
 (B) 20
 (C) 24
 (D) 28
 (E) 32

48. Jeffrey wrote 1 on 1 slip of paper, 2 on 2 slips of paper, 3 on 3 slips of paper, 4 on 4 slips of paper, 5 on 5 slips of paper and 6 on 6 slips of paper. If he draws 1 slip of paper at random, what is probability of getting an odd number?
 (A) $\frac{1}{2}$
 (B) $\frac{2}{5}$
 (C) $\frac{3}{4}$
 (D) $\frac{5}{6}$
 (E) $\frac{3}{7}$

49. If $1 + \frac{a}{b} = 1 - \frac{b}{c} = \frac{1}{4}$, find the value of $\frac{a}{c}$?
 (A) $-\frac{9}{16}$
 (B) -1
 (C) 1
 (D) $\frac{3}{4}$
 (E) $\frac{3}{16}$

50. If a tree 12 feet high casts a shadow of 1 foot 3 inches and the flag pole next to it casts a shadow of 2 feet and 1 inch, how high is the flag pole?
 (A) 36 feet
 (B) 30 feet
 (C) 40 feet
 (D) 20 feet
 (E) 16 feet

-----Good Luck -----

No.	Answers	R (✓)	W(X)	N
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Answer Sheet

Name: _____

Score: _____