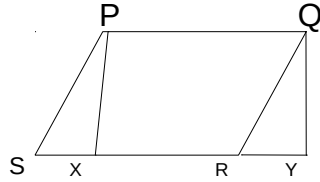


1. If $9x^2 + 25y^2 = 181$ and $xy = -6$, find the value of $3x+5y$.
2. If $\sqrt{1+\frac{7}{9}} = 1+\frac{x}{3}$, then find x .
3. $\frac{2}{3}$ of a girls in the class are over 5 feet tall, $\frac{1}{6}$ of the girls in that class are over 5 feet 3 inches tall. If 27 girls are in between 5 feet and 5 feet 3 inches, how many girls are there in that class?
4. The sum of length, breadth and depth of cuboid is 19 cm. The length of its diagonal is 11cm. Find the total surface area of the cuboid.
5. A regular polygon has 27 diagonals. Find the number of sides of the regular polygon
6. The count of bacteria in a culture grows by 10% in the first hour, decreases by 8% in second hour and again increases by 12 % in third hour. If initially the count of bacteria in the sample was 1,31,250, what will be count of bacteria after three hours?
7. If $4^{44} + 4^{44} + 4^{44} + 4^{44} = 4^x$. Find the value of x .
8. There are 100 multiple choice questions in an examination. For every correct answer the students gets 5 marks and for every wrong answer 2 marks are deducted from the total score of correct answers. Suppose, the students attempts all the questions and his total score is 220, how many questions did he attempt correctly?
9. 500 persons are taking a dip into a cylinder pond which is 80 meters long and 50 meters broad. What is the raise of water level in the pond if the average displacement of water by a person is 0.04 meter^3 ?
10. A number x is selected at random from the numbers 1, 2, 3 & 4. Another y is selected at random from the numbers 1, 4, 9 & 16. Find the probability that the product of x and y is less than 16.
11. The square of 2 consecutive positive integers differs by 2019. What is the sum of these two integers?

12. PQRS is a parallelogram PX and QY are respectively the perpendicular from P and Q to SR produced. Prove that $PX = QY$.



13. The perimeter of a rectangle is 240cm, its length is increased by 10% and its breadth is decreased by 20% but the perimeter remains unchanged. Find the length and breadth of the rectangle

14. Simplify:
$$\frac{0.25x^2 - 0.8xy + 0.64y^2 - 0.09z^2}{0.5x - 0.8y - 0.3z}$$
.

15. The area of square ABCD is 16 cm^2 . Find the area of the square so formed by joining the mid points of the sides of the square ABCD.

16. Find whether the polynomial $4a^4 - 8a^3 + 5a^2 - a + 1$ is completely divisible by $2a^2 - 3a + 1$.

17. Draw the graph of the equation $2x + y = 6$. Shade the region bounded by the graph and the coordinate axis.

18. Construct a rectangle ABCD whose diagonal is 8cm and the angle between the diagonals is 45° .

19.

Fill up the blanks and encircle the words in the grid given below.

1. Sum of the -----of a quadrilateral is 360°
2. If the diagonal of a parallelogram at right angles then it is a -----.
3. A figure made of two isosceles triangles when the opposite side of common base is -----.
4. The -----angles of a parallelogram are supplementary.
5. In a quadrilateral ABCD, AB, BC, CD and AD are its ----- and AC is -----
6. If an angle of quadrilateral is greater than 180° , then is -----quadrilateral.
7. If a point is neither on the quadrilateral nor in its exterior then it is in its -----.
8. The opposite of interior is -----.

D	I	A	G	O	N	A	L	X
A	W	R	A	L	N	I	E	I
N	T	H	D	O	L	V	U	N
G	K	O	J	K	N	S	M	T
L	G	M	A	O	I	Q	R	E
E	J	B	C	D	Y	T	V	R
S	M	U	E	W	F	X	E	I
Y	C	S	N	P	C	Z	X	O
Z	E	X	T	E	R	I	O	R

20. Read the given clues and then fill in the boxes.

Across:

- Smallest set of numbers which is closed under subtraction.
- A number of the form $\frac{P}{Q}$ where P and Q are integers and Q not equal to zero.
- A number is divisible by 2.

Down:

- Related to an operation on rational numbers which gives same result even When the numbers changed places.
- Opposite of the word "negative"
- Additive identity for rational numbers.
- A prime number which is a sum of even number and prime number.

		4			7				
		P							
					E			5	
		1		T		G			S
2	3	T				A		O	
	A								
		6		E					