

# Little Angels Public School, Barpali

## Holiday Home Work (2022-23)

**Class – IX**

**Sub –Maths**

1. Express the following in the form  $\frac{p}{q}$ , where p and q are integers and  $q \neq 0$ .

- i)  $0.\bar{6}$                       ii)  $0.4\bar{7}$                       iii)  $3.\bar{2}$                       iv)  $18.\bar{48}$

2. Represent  $\sqrt{2}, \sqrt{3}, \sqrt{5}$ , and  $\sqrt{10}$ , on the number line.

3. Visualise the representation of  $6.4\bar{7}$  on the number line up to 6 decimal place.

4. Rationalise the denominator of the following

- i)  $\frac{1}{\sqrt{6}-\sqrt{5}}$                       ii)  $\frac{30}{5\sqrt{3}-3\sqrt{5}}$                       iii)  $\frac{6-4\sqrt{2}}{6+4\sqrt{2}}$                       iv)  $\frac{\sqrt{7}+\sqrt{2}}{9+2\sqrt{14}}$

5. Evaluate :  $\left(\frac{3125}{243}\right)^{-\frac{4}{5}}$

6. Simplify :  $\left[9\left(64^{\frac{1}{3}} + 125^{\frac{1}{3}}\right)^3\right]^{\frac{1}{6}}$

7. Prove that :  $\left(\frac{2}{3}\right)^0 \times \frac{3^0}{1} \times \left[\left(\frac{1}{2}\right)^1 + 1\right] = \frac{3}{2}$

8. Prove that :  $\frac{1}{2+\sqrt{3}} + \frac{2}{\sqrt{5}-\sqrt{3}} + \frac{1}{2-\sqrt{5}} = 0$

9. Express  $\frac{1}{1+\sqrt{2}-\sqrt{3}}$  with rational denominator.

10. Draw a triangle PQR whose vertices are P = (1, -6), Q = (7, 4) and R = (-4, 4)

11. Draw a parallelogram ABCD whose vertices A, B, C & D are (-4, 8), (-4, 2), (6, -5) and (6, -1) respectively.

12. Draw a rhombus ABCD whose vertices A, B, C and D are (1, 4.5), (-1, 0), (1, -3.5) and (3, 0) respectively.

13. In which quadrant or on which axis do each of the points (-2, 4), (3, -1), (-1, 0), (1, 2) and (-3, -5) lie.

14. Find an angle whose supplement is three times of its complement.

15. Find an angle which is equal to half of its complement.

16. Find an angle which is double of its supplement.

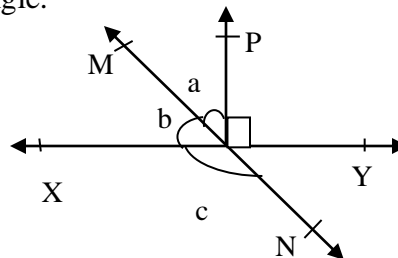
17. Find an angle of its reflex angle is double of the angle.

18. In the given figure,

line XY and MN intersect at O.

If  $\angle POY = 90^\circ$  and  $a:b = 2:3$ ,

Find C.



19. In the given figure,

If  $\angle PQR = \angle PRQ$  then

Prove that  $\angle PQS = \angle PRT$

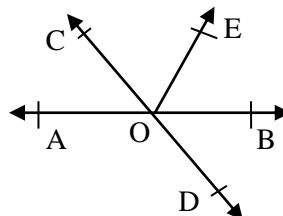
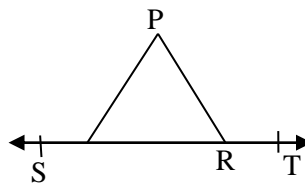
20. In the given figure,

lines AB and CD intersect at O.

If  $\angle AOC + \angle BOE = 70^\circ$

and  $\angle BOD = 40^\circ$ ,

Find  $\angle BOE$  and reflex  $\angle COE$

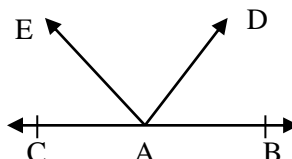


21. In the given figure

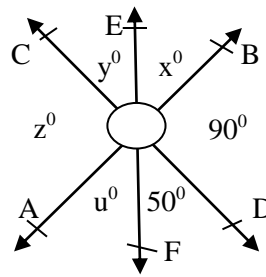
AB and AC are opposite rays

$\angle BAD + \angle CAE = 90^\circ$

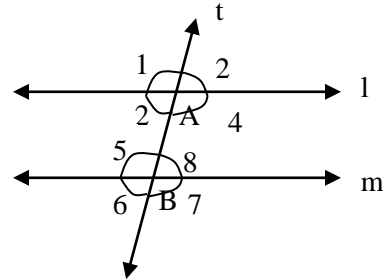
Find  $\angle DAE$



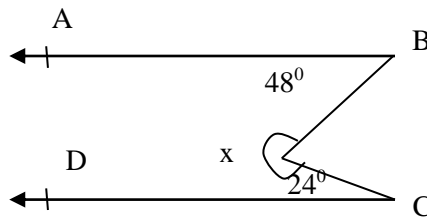
22. In the following figure,  
three coplanar lines intersect at point o,  
forming angles as shown  
obtain value of  $x$ ,  $y$ ,  $z$  and  $u$ .



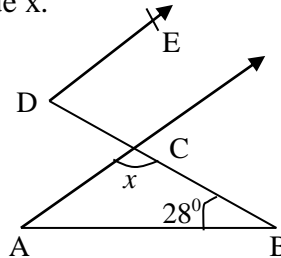
23. Prove that if a transversal intersect two parallel lines, then each pair of alternate interior angle are equal.  
24. Prove that if a transversal intersect two parallel lines then each pair of consecutive interior angles are supplementary.  
25. If the bisectors of a pair of corresponding angles formed by transversal with two parallel lines, prove that the bisectors are parallel.  
26. In the given figure  
 $l \parallel m$  and transversal 't'  
intersect with A and B  $\angle 1 : \angle 2 = 3 : 2$   
Determine all the eight angles.



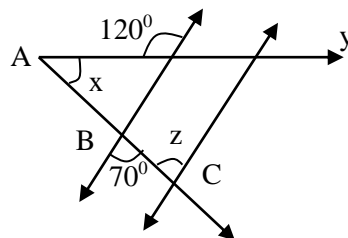
27. In the given figure  $AB \parallel CD$ , Find  $x$ .



28. In the given figure, If  $AC \parallel DE$ , then the value  $x$ .



29. In the given figure,  $BD \parallel CE$ , Find  $x$ ,  $y$  and  $z$ .



30. In the given figure  $AB \parallel CD$  and  $BC \parallel DE$ , find  $x$ .

