INDIAN SCHOOL NIZWA – WORKSHEET

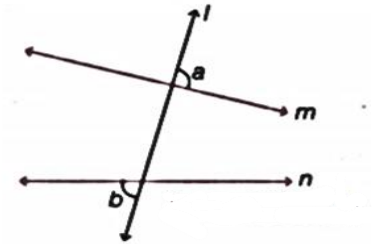
MATHEMATICS

CH: 5 Parallel and Intersecting Lines

Name: _____ Date: _____ Class: VII Sec: _

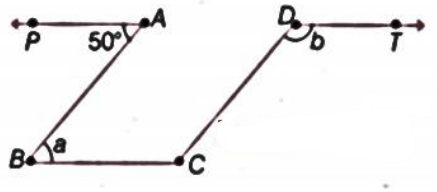
I. **Multiple Choice Questions**

1. Which of the following is **True** if a transversal crosses two parallel lines?
   A) Corresponding angles are not equal
   B) Alternate angles are not equal
   C) The sum of interior angles on the same side is $180°$
   D) Vertically opposite angles are not equal
2. If two lines intersect and form four equal angles, what is the measure of each angle?
   A) $45°$ B) $60°$ C) $90°$ D) $180°$
3. What do we call a line that crosses two or more lines at different points?
   A) Parallel line B) Transversal C) Perpendicular line D) Opposite line
4. If $\angle a$ and $\angle b$ are a linear pair and $\angle a = 120°$, what is $\angle b$?
   A) $60°$ B) $120°$ C) $90°$ D) $30°$
5. In the given figure a and b are



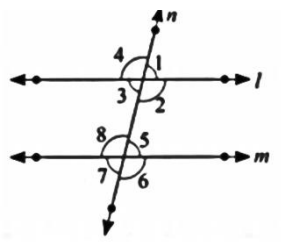
A) Corresponding angles B) Alternate exterior angles
C) Exterior angles D) Vertically opposite angles

6. In the given figure, if PA, BC and DT are parallel lines and AB and DC are parallel lines, then the values of a and b are respectively



A) 60° and 120° B) 50° and 130°
C) 70° and 110° D) 80° and 100°

7. In the following figure, which pair of angles are not corresponding angles?



A. $\angle 1, \angle 5$ B. $\angle 2, \angle 6$ C. $\angle 3, \angle 7$ D. $\angle 3, \angle 5$

8. Assertion (A): Alternate interior angles are equal when lines are parallel.
Reason (R): They are on opposite sides of the transversal and inside the lines.
A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, but R is not the correct explanation of A
C. A is true but R is false.
D. A is false, but R is true.

9. Assertion (A) : If one pair of vertically opposite angles is acute, then the other pair is obtuse.
Reason (R) : Vertically opposite angles are always equal.
A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, but R is not the correct explanation of A
C. A is true but R is false.
D. A is false, but R is true.

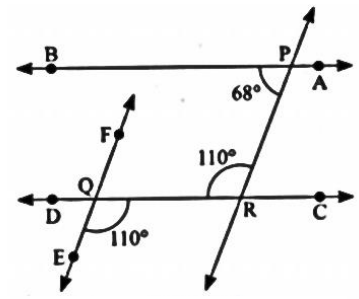
10. Assertion (A): Intersecting lines can make angles of 90^0 each.
Reason (R): All intersecting lines are perpendicular.
A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, but R is not the correct explanation of A
C. A is true but R is false.
D. A is false, but R is true.

11. Assertion (A): Vertically opposite angles are never equal.
Reason (R): Vertically opposite angles are formed by two intersecting lines and lie opposite to each other.
A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, but R is not the correct explanation of A
C. A is true but R is false.
D. A is false, but R is true.

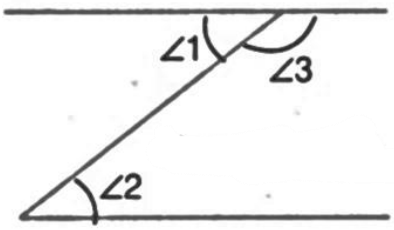
II. **Solve**

12. Two railway tracks are said to be parallel. A boy standing on a bridge drops a straight stick that cuts across both the tracks.
a) What is the name of the stick in geometric terms?
b) Also, name any two pairs of angles formed and say if they are equal.

13. State which lines are parallel and why?



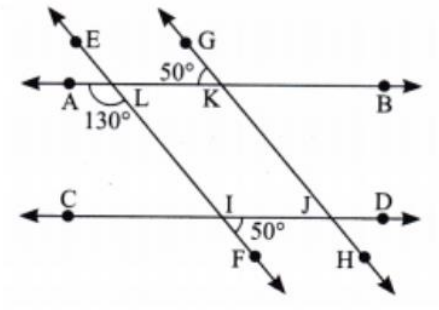
14. In the figure $\angle 2 = 58^0$.Find $\angle 1$ and $\angle 3$.



15. In an optical illusion, a student draws 4 horizontal parallel lines on a sheet of paper.Between each pair of lines, they draw zigzag patterns that make the lines appear slanted. If a transversal is drawn across these lines forming a corresponding angle of 120^0 with the first line, what are the

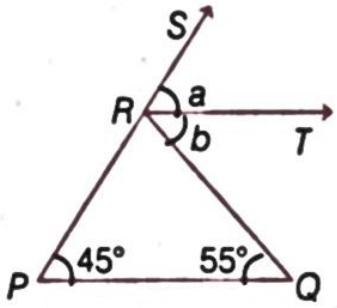
corresponding angles with the other three lines?Why does the illusion make the lines appear non-parallel?

16. Find whether the lines AB and CD are parallel or not.

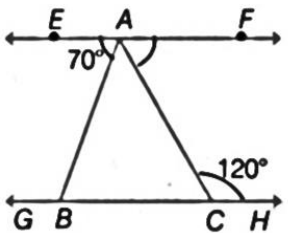


17. Identify the types of angles formed when two lines intersect:
    a) Angles opposite to each other
    b) Adjacent angles forming a straight line

18. In the following figure, PQ is parallel to RT. Find the value of a+b.



19. In the following figure, EF is parallel to GH, $\angle EAB = 70^0$ and $\angle ACH = 120^0$. Then, find $\angle CAF$ and $\angle BAC$.

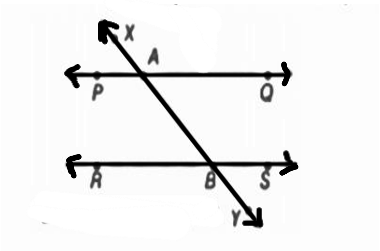


20. Two lines intersect to form 4 angles.If one angle is 70^0, find te measures of the other three angles.

21. Define
    a) Parallell lines
    b) Perpendicular lines

III. **Case Based Questions**

22. In a city plan, two streets PQ and RS are parallel. A diagonal road XY cuts across both, forming angles.



Now based on this, answer the following questions.

a) If $\angle PAY = 118^0$, find $\angle XBR$.
b) If a street CD intersects PQ at 90^0, what type of line is CD to PQ?

c) Find the measure of the alternate interior angle to ∠PAY.
d) Name one pair of corresponding angles.

23. **Crossword Puzzle**

Fill the crossword puzzle with the help of following clues.

Across

1. Two lines in a plane which do not intersect each other.

2. A pair of adjacent angles having their non common arms opposite rays.

3. The two lines are intersected by a line at distinct points.

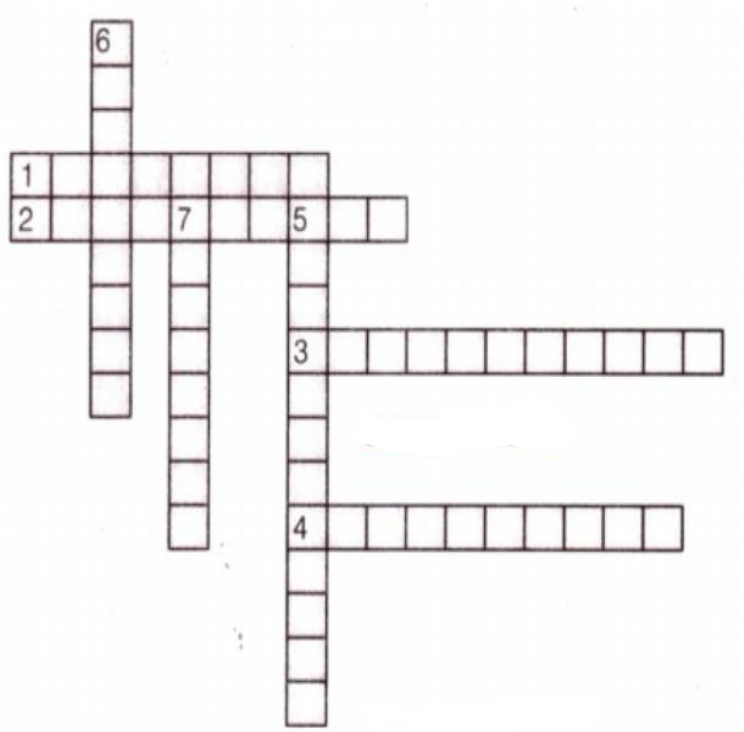
4. Sum of two interior angles is equal to 180°.

Down

5. The two lines in a plane intersect each other at one and only one point are called _____.

6. When two parallel lines intersected by a transversal at two distinct points then the _____ angles are equal.

7. A pair of angles having a common vertex, a common arm and their interiors do not overlap



REVISION

1. What is the value of $-4 \times (-6) + 8$?
2. What is the value of $-40 \times (-60) + 80$?
3. Which is greater: $\frac{5}{8}$ or 0.6?
4. Which is greater: $\frac{5}{8}$ or $\frac{7}{11}$?
5. What is $5.4 \div 0.9$?
6. A rectangle has a length of 12.5 cm and a width of 8.4 cm. What is its area? Show your calculation.
7. Convert the decimal 0.375 to a fraction in simplest form.
8. Write $\frac{9}{20}$ as a decimal.