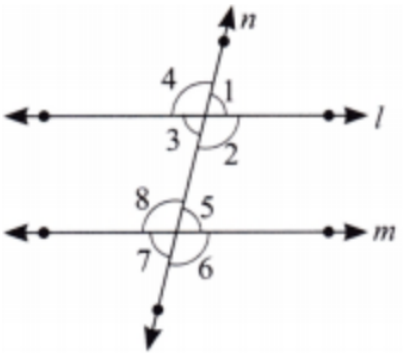
*** Choose The Right Answer From The Given Options.[1 Marks Each]** **[2]**

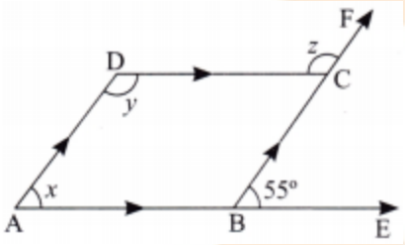
1. In the following figure, which pair of angles are not corresponding angles?



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

Ans. : (D) $\angle 3, \angle 5$

2. In parallelogram ABCD, AB is parallel to DC, and AD is parallel to BC. AB is produced to E, such that $\angle CBE = 55°$. BC is produced to F, such that BCF is a straight line. The values of x, y, and z, respectively, are-



(A) $125°, 55°, 125°$ (B) $125°, 125°, 55°$ (C) $55°, 125°, 125°$ (D) $55°, 135°, 125°$

Ans. : (C) $55°, 125°, 125°$

*** a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option.** **[1]**

3. **Assertion (A):** If a transversal cuts two parallel lines, then each pair of corresponding angles is equal.
Reason (R): A transversal intersects two parallel lines. If the measure of one of the angles is 50°, then the measure of its corresponding angle is 50°.

(A) Both assertion and reason are true and the reason is the correct explanation of assertion.

(B) Both assertion and reason are true but the reason is not the correct explanation of the assertion.

(C) Assertion is true and the reason is false.

(D) Assertion is false and the reason is true.

Ans.: (A) Both assertion and reason are true and the reason is the correct explanation of assertion.

*** Fill In The Blanks With Correct Alternative.[1 Marks Each]** **[4]**

4. If a _____ intersects two parallel lines, the alternate angles are equal.

   Ans. : transversal

5. Two angles are called a pair of _____ angles if their arms form two pairs of opposite rays.

   Ans. : vertically opposite

6. The angle measurement between two perpendicular lines is _____.

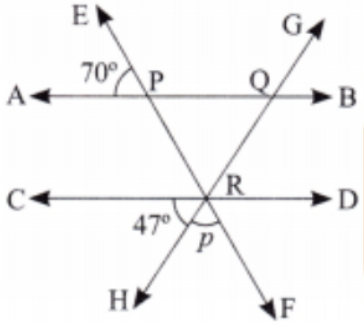
   Ans. : 90°

7. If a transversal intersects a pair of lines in such a way that the sum of interior angles on the same side of the transversal is 180°, then the lines are _____.

   Ans. : parallel

*** Questions With Calculation.[2 Marks Each]** **[2]**

8. (a) In the adjoining figure, find the values of x, y, and z.
   (b) In the adjoining figure, AB is parallel to CD. Find the value of p.



Ans. : (a) $x = 135^\circ$

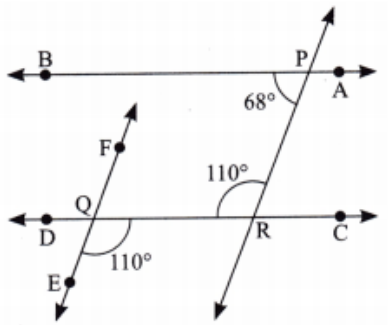
$y = 45^\circ$

$z = 105^\circ$

(b) $p = 63^\circ$

*** Questions With Calculation.[3 Marks Each]** **[9]**

9. State which lines are parallel and why.

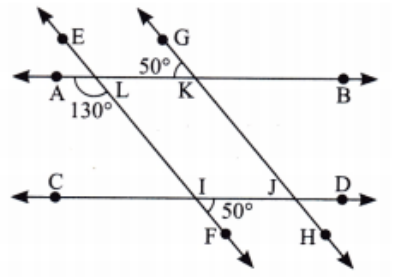


Ans. : If a transversal intersects two lines such that a pair of alternate interior angles is equal, then the two lines are parallel.

Since $\angle EQR = \angle PRQ = 110^\circ$ and lines FE and PR are intersected by a transversal DC such that the pair of alternate angles is equal.

So, FE || PR.

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



Ans. : $\angle CIF + \angle FIJ = 180^\circ$ "[Linear pair]

$\angle CIF = 180^\circ - \angle FIJ$

$= 180^\circ - 50^\circ = 130^\circ$

So, $\angle ALI = \angle CIF = 130^\circ$.

If two parallel lines are intersected by a transversal, then each pair of corresponding angles are equal. Here, $\angle ALI = \angle CIF = 130^\circ$ are two corresponding angles.

Hence, $AB \| CD$.

11. In the figure given below, if AB is parallel to CD and CD is parallel to EF, find $\angle ACE$.

Ans. : Given that AB is parallel to CD and CD is parallel to EF.

$\angle ECD = 180^\circ - 130^\circ = 50^\circ$

[Sum of the interior angles of same side of transversal]

$130^\circ + \angle ECD = 180^\circ$

$\angle ECD = 180^\circ - 130^\circ = 50^\circ$

Also, $\angle BAC = \angle ACD = 70^\circ$ [Alternate angles]

Now, $\angle ACD = \angle ECD + \angle ACE$

$\angle ACE = \angle ACD - \angle ECD$

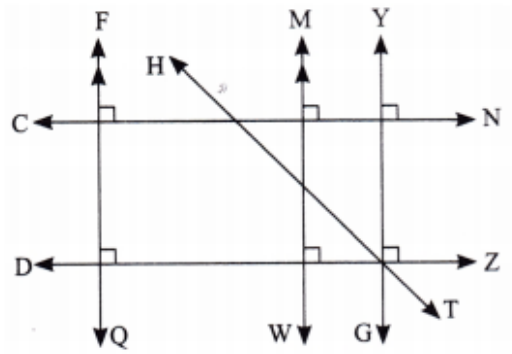
$= 70^\circ - 50^\circ$

$= 20^\circ$

Therefore, $\angle ACE = 20^\circ$.

*** Questions With Calculation.[5 Marks Each]** **[10]**

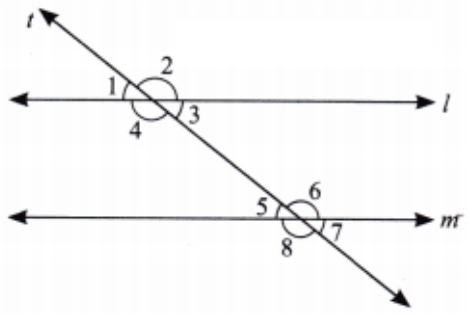
12. Identify the given pair of lines as either parallel, perpendicular, or intersecting.



(a) Lines FQ and HT are _____ lines.
(b) Lines FQ and MW are _____ lines.
(c) Lines CN and FQ are _____ lines.
(d) Lines DZ and YG are _____ lines.
(e) Lines CN and YG are _____ lines.
(f) Lines HT and MW are _____lines.

Ans. : (a) Lines FQ and HT are intersecting lines.
(b) Lines FQ and MW are parallel lines.
(c) Lines CN and FQ are perpendicular lines.
(d) Lines DZ and YG are perpendicular lines,
(e) Lines CN and YG are perpendicular lines.
(f) Lines HT and MW are intersecting lines.

13. In the given figure, l || m and t is a transversal. If $\angle 1 = 55^\circ$, find $\angle 2, \angle 3, \angle 4, \angle 5, \angle 6, \angle 7$ and $\angle 8$.



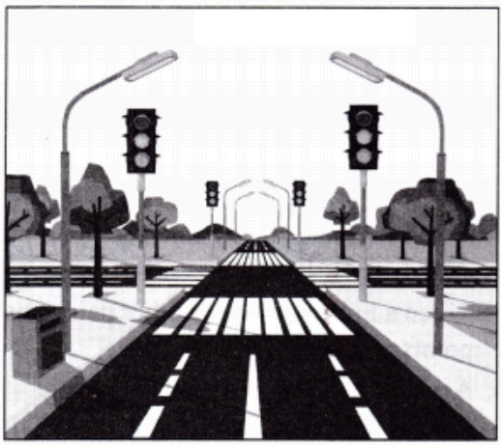
Ans. : Since l || m and $\angle 1 = 55^\circ$
So, $\angle 3 = \angle 1 = 55^\circ$ (Vertically opposite angles)
and $\angle 1 + \angle 2 = 180^\circ$ (Linear pair)
or, $\angle 2 = 180^\circ - \angle 1 = 180^\circ - 55^\circ = 125^\circ$
Also, $\angle 5 = \angle 3 = 55^\circ$ (Alternate interior angles)
Now, $\angle 4 + \angle 5 = 180^\circ$
(Interior angles on the same side of the transversal)
or $\angle 4 = 180^\circ - \angle 5 = 180^\circ - 55^\circ = 125^\circ$
Also, $\angle 6 = \angle 2 = 125^\circ$ (Corresponding angles)
Now $\angle 5 = \angle 7 = 55^\circ$ (Vertically opposite angles)

Also, $\angle 6 = \angle 8 = 125^\circ$ (Vertically opposite angles)

Hence, $\angle 2 = 125^\circ, \angle 3 = 55^\circ, \angle 4 = 125^\circ, \angle 5 = 55^\circ, \angle 6 = 125^\circ, \angle 7 = 55^\circ$ and $\angle 8 = 125^\circ$.

*** case - based/data -based questions** **[4]**

A zebra crossing is a safe place on the road where people can cross. It has white stripes painted on the road. These stripes are straight and equally spaced. The stripes are parallel to each other and perpendicular to the sides of the road, showing both parallel and perpendicular lines.



Meera looked out of the window and sketched her observation on a sheet of paper, noting that the shadow of the traffic light and the shadow of the electric pole, both parallel to each other, crossed the parallel stripes of the zebra crossing at different points.

Help Meera answer the following questions:

14. What is the measure of angle 5?
15. What is the measure of angle 1?
16. What is the measure of angle 2?
17. What is the measure of angle 3?

Ans. : (1) 65°

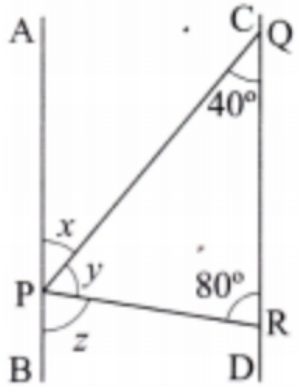
(2) 115°

(3) 65°

(4) 115°

*** Match the following.** **[4]**

18. In the following figures, AB is parallel to CD. Match column I with column II.



(a) The value of x is	(i) 80°
(b) The value of y is	(ii) 40°
(c) The value of z is	(iii) 20°
(d) The value of x + y – z is	(iv) 60°

Ans. :

(a) The value of x is	(ii) 40°
(b) The value of y is	(iv) 60°
(c) The value of z is	(i) 80°
(d) The value of x + y – z is	(iii) 20°

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