LINES And ANGLES

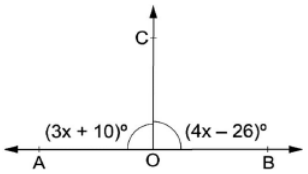
ASSERTION REASONING

Directions: In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
(C) Assertion (A) is true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

1. Assertion : If angles 'a' and 'b' form a linear pair of angles and a = 40°, then b = 150°.
Reason: Sum of linear pair of angles is always 180°.

2. Assertion: In the given figure, AOB is a straight line. If ∠AOC = (3x + 10)° and ∠BOC (4x – 26)°, then ∠BOC = 860
Reason: The sum of angles that are formed on a straight line is equal to 180°

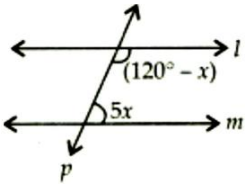


3. Assertion : If two interior angles on the same side of a transversal intersecting two parallel lines are in the ratio 5:4, then the greater of the two angles is 100^0.
Reason: If a transversal intersects two parallel lines, then the sum of the interior angles on the same side of the transversal is 180^0.

4. Assertion : An angle is 14^0 more than its complementary angle, then angle is 52^0.
Reason: Two angles are said to be supplementary if their sum of measure of angles is 180°

5. Assertion : Supplement of angle is one fourth of itself. The measure of the angle is 144^0
Reason: Two angles are said to be supplementary if their sum of measure of angles is 180^0

6. Assertion: The value of x from the adjoining figure, if ℓ || m is 15^0.
Reason: If two parallel lines are intersected by a transversal, then each pair of corresponding angles so formed is equal.



7. Assertion: the sum of two adjacent angle is 100° and one of them is 35° then other is 65°
Reason: adjacent angles are always supplementary.

8. Assertion: The supplement of the angle (120+a−2b)° is (60−a+2b)°
Reason: if the sum of two angle is 180° then the angles are supplementary

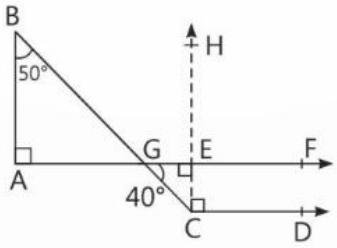
9. Assertion: A ray has only one end points.
Reason: A ray is a part of a line, which has a starting point and tends infinitely in both direction.

10. Assertion: Bisectors of the adjacent angles forming a linear pair form a right angle.
Reason: Angles forming a linear pair can both be acute angles

Case study

1.

Satyam was playing with torch. He put mirrors at different places and threw torch light over them. When he threw light, it got reflected as shown below in geometrical figure.



On the basis of the above information, solve the following questions.

Q 1. Which of the following set of points is a collinear?

a. G, F, H b. B, A, G c. G, E, F d. E, C, D

Q 2. The degree measure of ∠BGA is:

a. 55° b. 60° c. 50° d. 40°

Q 3. The degree measure of ∠BGE is:

a. 140° b. 45° c. 50° d. 55°

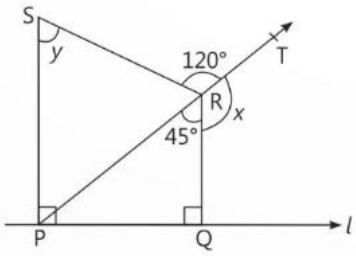
Q 4. The relation between line segments EF and CD is:

a. parallel b. perpendicular
c. intersecting d. not defined

Q 5. In the given figure, one of the vertically opposite angle pair is:

a. ∠GAB and ∠ABG b. ∠GEH and ∠HEF
c. ∠AGB and ∠CGE d. ∠HEF and ∠FEC

2. In a science experiment, a chemical was allowed to flow with high force and high temperature on the floor and the results were recorded. The movement of chemical is as shown in geometrical form as below.



On the basis of the above information, solve the following questions.

Q 1. Which of the following line segment is parallel?

a. PR and RQ b. PS and QR

c. SR and PR d. QR and RS

Q 2. Measure of angle x is:

a. 130° b. 125° c. 135° d. 140°

Q 3. Which of the following points are collinear?

a. S, P and R b. P, R and Q

c. P, R and T d. T, R and Q

Q 4. Measure ∠SRP is:

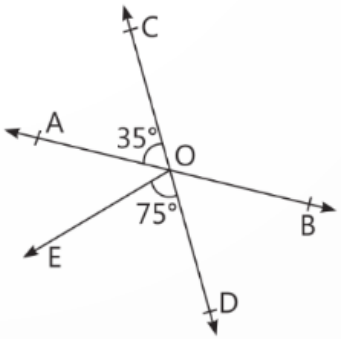
a. 50° b. 45° c. 55° d. 60°

Q 5. The sum of angles ∠PRQ + ∠QRT is a

a. complementary b. supplementary

c. Both a. and b. d. None of these

3. A math's teacher was teaching students about intersecting lines.
Suppose AB and CD are two intersecting lines, which meets at point O. In this point O, she draw a line OE and all these lines were making different angles with each other.



After explaining the description of the figure, she asked the following questions from the students.

On the basis of the above information, solve the following questions.

Q 1. Find the measure of ∠BOD.

Q 2. Check whether pair of angles ∠AOC and ∠BOC makes a linear pair.

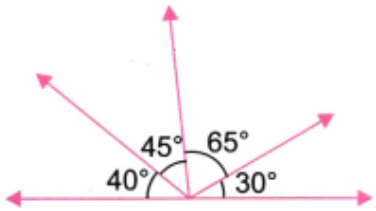
Q 3. Which of the following angles form a non collinear lines?

(i) A, O, B (ii) C, O, E

Q 4. Find the measure of ∠AOE.

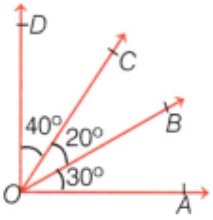
MCQ

1. Which of the following angles is acute?
A) 90°
B) 45°
C) 180°
D) 270°
2. If two lines intersect at a point, how many angles are formed?
A) 1
B) 2
C) 3
D) 4
3. Which type of angles are equal in measure?
A) Supplementary angles
B) Complementary angles
C) Vertical angles
D) Adjacent angles
4. Which of the following pairs of angles are supplementary?
A) 30° and 150°
B) 45° and 45°
C) 60° and 30°
D) 90° and 90°
5. The angles that share a common vertex and a common side are called:
A) Supplementary angles
B) Complementary angles
C) Adjacent angles
D) Vertical angles
6. The measure of an angle which is one-fourth of its complement is:
A) 22.5°
B) 45°
C) 30°
D) 60°
7. A ray that divides an angle into two congruent angles is called:
A) Perpendicular
B) Bisector
C) Transversal
D) Vertex
8. The angle measure for one complete revolution is
(a) 180°
(b) 360°
(c) 90°
(d) none of these
9. Measures of the two angles between hour and minute hands of a clock at 9 0 ’clock are
(a) 60°, 300°
(b) 270°, 90°
(c) 75°, 285°
(d) 30°, 330°
10. The number of obtuse angles in the given figure is



(a) 2
(b) 3
(c) 4
(d) 5

11. The number of angles in the given figure is



(a) 3
(b) 4
(c) 5
(d) 6

12. If a bicycle wheel had 48 spokes, then the angle between a pair of two consecutive spokes is

(a) $(5\frac{1}{2})^\circ$
(b) $(7\frac{1}{2})^\circ$
(c) $(\frac{2}{11})^\circ$
(d) $(\frac{2}{15})^\circ$