

Important Assertion Reason Questions on Pair of Linear Equations in Two Variables

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

Choose the correct option for the following questions:

- (A). Both Assertion (A) and Reason (R) are true, and Reason is the correct explanation of Assertion.
- (B). Both Assertion (A) and Reason (R) are true, but Reason is not the correct explanation of Assertion.
- (C). Assertion (A) is true, but Reason (R) is false.
- (D). Assertion (A) is false, but Reason (R) is true.

Question 1:

Assertion (A): A pair of linear equations in two variables can have a unique solution.

Reason (R): Two intersecting lines always meet at exactly one point.

Options:

- (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.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 2:

Assertion (A): The equations $2x + 3y = 5$ and $4x + 6y = 10$ represent coincident lines.

Reason (R):

The ratios of corresponding coefficients are equal.

$$\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$$

Options:

- (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.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 3:

Assertion (A): Two parallel lines have no common solution.

Reason (R): Parallel lines never intersect each other.

Options:

- (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.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 4:

Assertion (A): If two linear equations intersect at one point, then the system is consistent.

Reason (R): A consistent system has at least one solution.

Options:

- (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.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 5:

Assertion (A): The equations $x + y = 4$ and $2x + 2y = 8$ have infinitely many solutions.

Reason (R): Both equations represent the same straight line.

Options:

- (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.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 6:

Assertion (A): The substitution method can be used to solve a pair of linear equations.

Reason (R): In the substitution method, one variable is replaced using the value from another equation.

Options:

- (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.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 7:

Assertion (A): If $a_1a_2 \neq b_1b_2$ then the pair of linear equations has a unique solution.

Reason (R): The lines intersect at one point when their slopes are different.

Options:

- (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.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 8:

Assertion (A): A pair of inconsistent equations has no solution.

Reason (R): Inconsistent equations represent intersecting lines.

Options:

- (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.

Correct Answer: (C). A is true, but R is false.

Question 9:

Assertion (A): The elimination method removes one variable to solve equations.

Reason (R): The coefficients of one variable are made equal before subtraction or addition.

Options:

- (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.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 10:

Assertion (A): The graphical solution of two equations is the point where the lines intersect.

Reason (R): The intersection point satisfies both equations simultaneously.

Options:

- (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.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 11:

Assertion (A): The equations $3x + 2y = 7$ and $6x + 4y = 12$ are inconsistent.

Reason (R): The ratios of coefficients satisfy: $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

Options:

- (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.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 12:

Assertion (A): Coincident lines have infinitely many common points.

Reason (R): Coincident lines overlap completely.

Options:

- (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.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 13:

Assertion (A): The equations $x - y = 2$ and $2x - 2y = 4$ represent the same line.

Reason (R): One equation is obtained by multiplying the other equation by 2.

Options:

- (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.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 14:

Assertion (A): The pair of equations $x + y = 3$ and $x + y = 5$ has no solution.

Reason (R): The lines represented by the equations are parallel.

Options:

- (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.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Question 15

Assertion (A): A system of equations can be solved graphically.

Reason (R): The common point of the graphs gives the solution of the equations.

Options:

- (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.

Correct Answer: (A). Both A and R are true, and R is the correct explanation of A.

Download PDF - Assertion Reason Questions For Class 10 Maths Chapter 3 Pair of Linear Equations in Two Variables

