Assertion and Reason Questions for Class 10 Maths Chapter - 3 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 :

(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.

Q.1. Assertion : The graph of the linear equations $3x+2y=12$ and $5x-2y=4$ gives a pair of intersecting lines.

Reason : The graph of linear equations $a_1x+b_1y+c_1=0$ and $a_2x+b_2y+c_2=0$ gives a pair of intersecting lines if $a_1/a_2 \neq b_1/b_2$

Answer : (a)

Q.2. Assertion : If the pair of lines are coincident, then we say that pair of lines is consistent and it has a unique solution.

Reason : If the pair of lines are parallel, then the pairs has no solution and is called inconsistent pair of equations.
Answer: (d)

Q.3. Assertion: The linear equations $x-2y-3=0$ and $3x+4y-20=0$ have exactly one solution
Reason: The linear equation $2x+3y-9=0$ and $4x+6y-18=0$ have a unique solution.

Answer : (c)

Q.4. Assertion : The graphical representation of the equations $x+2y=3$ and $2x+4y+7=0$ gives a pair of coincident lines.

Reason : The graph of linear equations $a_1x+b_1y+c_1=0$ and $a_2x+b_2y+c_2=0$ gives a pair of intersecting lines if $a_1/a_2 \neq b_1/b_2$

Answer : (d)

Q.5. Assertion : The value of k for which the system of equations $3x+ky=0$ and $2x-y=0$ has a unique solution is $k \neq -3/2$

Reason : The graph of linear equations $a_1x+b_1y+c_1=0$ and $a_2x+b_2y+c_2=0$ gives a pair of intersecting lines if $a_1/a_2 \neq b_1/b_2$

Answer : (a)

Q.6. Assertion : The number of common solutions for the system of linear equations $5x+4y+6=0$ and $10x+8y=12$ is zero.

Reason : The graph of linear equations $a_1x+b_1y+c_1=0$ and $a_2x+b_2y+c_2=0$ gives a pair of intersecting lines if $a_1/a_2 \neq b_1/b_2$

Answer : (b)

Q.7. Assertion : The value of k for which the system of linear equations $3x-4y=7$ and $6x-8y=k$ have infinite number of solution is 14.

Reason : The graph of linear equations $a_1x+b_1y+c_1=0$ and $a_2x+b_2y+c_2=0$ gives a pair of intersecting lines if $a_1/a_2 \neq b_1/b_2$

Answer : (c)

Q.8. Assertion : A pair of linear equations has no solution (s) if it is represented by intersecting lines graphically.

Reason : If the pair of lines are intersecting, then the pair has unique solution and is called consistent pair of equations.

Answer : (d)

Q.9. Assertion : The value of $q=\pm 2$, if $x=3$, $y=1$ is the solution of the line $2x+y-q^2-3=0$.

Reason : The solution of the line will satisfy the equation of the line.

Answer : (a)

Q.10. Assertion : The value of k for which the system of linear equations $kx-y=2$ and $6x-2y=3$ has a unique solution is 3.

Reason : The graph of linear equations $a_1x+b_1y+c_1=0$ and $a_2x+b_2y+c_2=0$ gives a pair of intersecting lines if $a_1/a_2 \neq b_1/b_2$

Answer : (d)