Mathematics — Ganita Manjari

Chapter 13 Test 5

Two Variables, One Line

Class IX | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. Choose one option in A; show working in B–D.
2. No calculators. Give exact answers unless an approximation is requested.
3. Read the scales on graphs carefully. Other diagrams are not necessarily to scale.

SECTION A

(5 questions × 1 mark = 5 marks)

1. Which operation eliminates y from $3x + 4y = 8$ and $5x - 4y = 16$?

(A) Add the equations
(B) Subtract the equations
(C) Multiply the equations
(D) Divide the equations

2. What are the smallest positive integer multipliers for $4x + 3y = 7$ and $6x + 5y = 11$ to eliminate x by subtraction?

(A) 2 and 3 (B) 4 and 6
(C) 3 and 2 (D) 6 and 4

3. Elimination gives $8x = 24$ and $6y = -12$. The solution is:

(A) $(-3,2)$
(B) $(3,2)$
(C) $(-2,3)$
(D) $(3,-2)$

4. A number has tens digit a and units digit b. Original number minus its reverse equals:

(A) $11(a - b)$ (B) $9(a - b)$
(C) $9(a + b)$ (D) $11(a + b)$

5. Which operation on a pair is NOT guaranteed to preserve its set of common solutions?

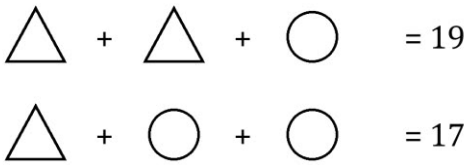
(A) Swap the equations
(B) Multiply the first by -2
(C) Replace the first by $0 = 0$
(D) Add the second to the first

SECTION B

(4 questions × 2 marks = 8 marks)

6. Given $5x + 2y = 16$ and $2x + 5y = 19$, find $x + y$ without finding x and y separately.

7. Each shape in figure has a fixed value. Find the value of the triangle and the circle.



8. For $7x + 3y = 40$ and $3x + 7y = 40$, show that $x = y$, then find both values.

9. Adding $x + y = 7$ and $x - y = 1$ gives $x = 4$. Why is this alone incomplete? Give one invalid pair with $x = 4$ and the correct solution.

SECTION C

(3 questions × 3 marks = 9 marks)

10. Solve $101x + 99y = 601$ and $99x + 101y = 599$ using the symmetry of their coefficients.

11. A student doubles $3x + 2y = 13$ as $6x + 4y = 13$. Correct this step and solve the pair $3x + 2y = 13$, $5x + 4y = 19$.

12. Solve $2(x - y) + 3(x + y) = 19$ and $3(x - y) - 2(x + y) = -4$.

SECTION D

(1 application question × 3 marks = 3 marks)

13. The table describes a two-digit number.

Fact	Value
Sum of the digits	11
Reversed number – original number	27

(i) Form two equations in its digits.

(ii) Find both digits.

(iii) Write the number and its reverse.