

TB(2B) Ch. 7 Linear Equations in 2 Unknowns Conventional Questions

1. [11-12 STest2]

(a) Complete the following tables:

(i) $3x = y - 2$

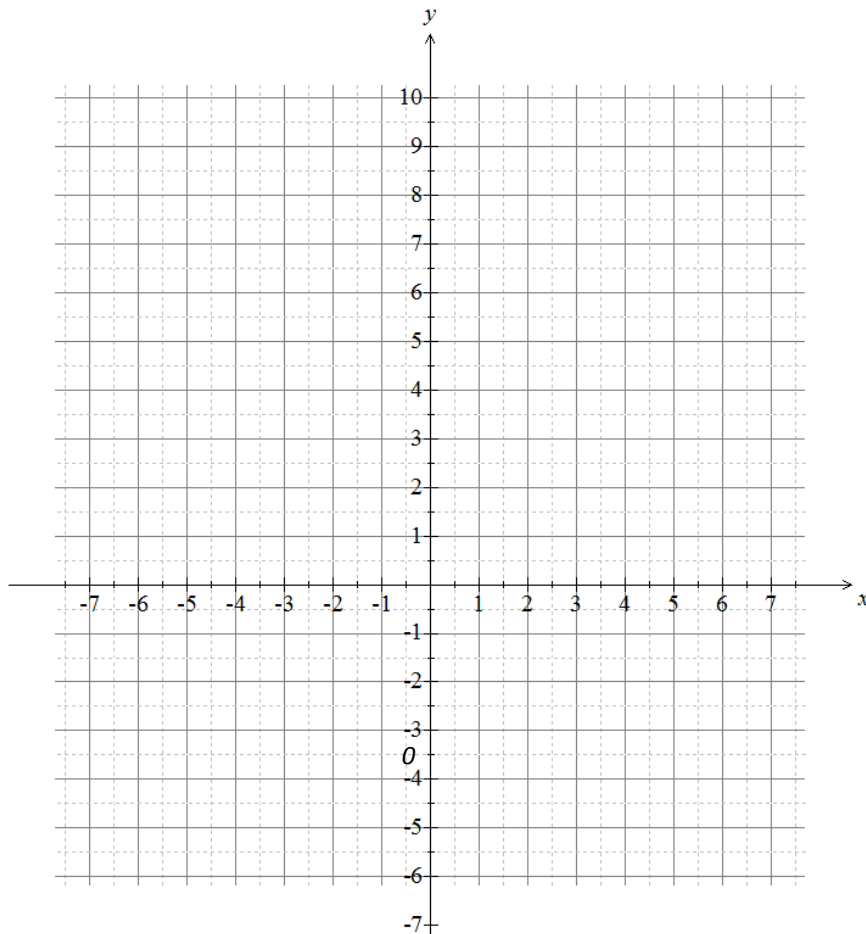
x			
y			

(ii) $y + 2x - 7 = 0$

x			
y			

(2 marks)

(b) Using the tables in (a), draw the graphs of $3x = y - 2$ and $y + 2x - 7 = 0$ on the rectangular coordinate plane below. **(2 marks)**



(c) Using the result of (b), the solution of $\begin{cases} 3x = y - 2 \\ y + 2x - 7 = 0 \end{cases}$ is $x = \underline{\hspace{2cm}}$, $y = \underline{\hspace{2cm}}$. **(1 mark)**

2. [11-12 STest2]

(a) Solve the simultaneous equations $\begin{cases} 4y + x = 19 \\ y - 10 = 5x \end{cases}$ algebraically. **(3 marks)**

(b) Hence, solve the simultaneous equations $\begin{cases} 400r + 100s = 19 \\ 100r - 500s = 10 \end{cases}$. **(2 marks)**

3. [11-12 Final exam #5]

In the morning session of a library tour, the ratio of the number of boys to the number of girls is 13:17. If 22 more boys join and 2 girls leave the tour in the afternoon session, the number of boys and girls are the same. Find the number of girls in the tour in the morning session. **(4 marks)**

4. [12-13 STest2, 1]

(a) Complete the following tables. **(2 marks)**

(i) $3x + y = -2$

x			
y			

(ii) $x = \frac{1}{2}(y - 3)$

x			
y			

(b) Using the tables in (a), draw the graphs of $3x + y = -2$ and $x = \frac{1}{2}(y - 3)$ on the rectangular coordinate plane in **Figure 1**. **(2 marks)**

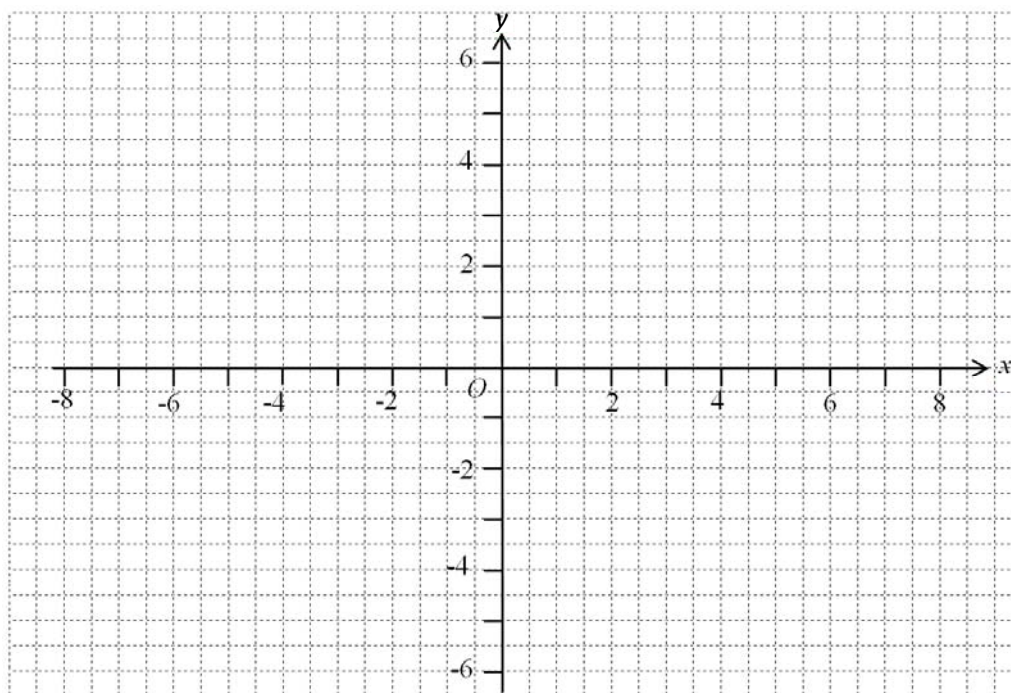


Figure 1

(c) Using the result of (b), the solution of $\begin{cases} 3x + y = -2 \\ x = \frac{1}{2}(y - 3) \end{cases}$ is $x = \underline{\hspace{2cm}}$, $y = \underline{\hspace{2cm}}$. **(1 mark)**

5. [12-13 S.Test 2, 4]

The total price of two pens and one pencil is \$3. The price of four pens is \$4.5 more expensive than that of one pencil. Find the prices of a pen and a pencil respectively.

(3 marks)

6. [12-13 Final Exam, 1]

Solve the simultaneous equations $\begin{cases} 2x - 2y = 1 \\ 3(x + 5) = 2y + 21 \end{cases}$

(3 marks)

7. [12-13 Mid-year Exam, 5]

(a) Complete the following table for the equation $5x - 2y + 4 = 0$.

(1 mark)

x	-3		4	
y		7		22

(b) If the graph of the above equation intersects the x -axis and y -axis at points $A(a, 0)$ and $B(0, b)$ respectively, find the values of a and b .

(2 marks)

8. [13-14 Stest2, 1]

(a) Draw the graphs of $2(y - 3) + x = 4$ and $3(x + 2) = 2y$ on the rectangular coordinate plane in **Figure 1** by completing the following tables first. (3 marks)

(i) $2(y - 3) + x = 4$

(ii) $3(x + 2) = 2y$

x			
y			

x			
y			

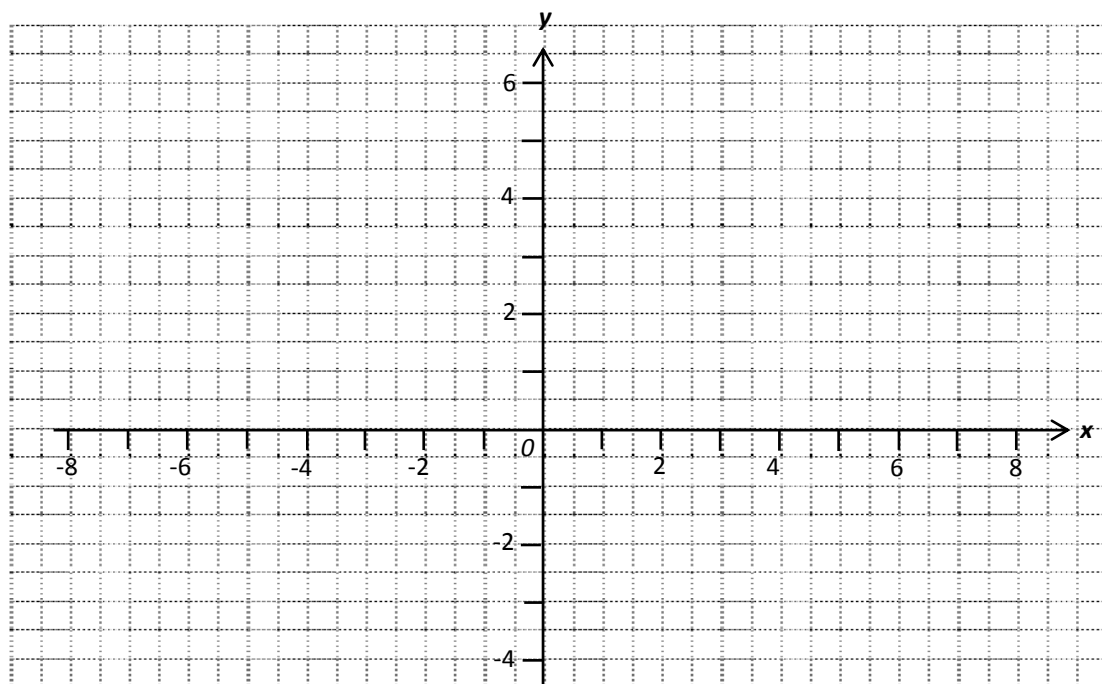


Figure 1

(b) Hence, the solution of $\begin{cases} 2(y-3) + x = 4 \\ 3(x+2) = 2y \end{cases}$ is $x = \underline{\hspace{2cm}}$, $y = \underline{\hspace{2cm}}$. (1 mark)

9. [13-14 Stest2, 6]

Buffalo milk and skimmed milk contain 5% and 1% of fats respectively. They are mixed to produce whole milk, which contains 2.5% of fats. How many litres of buffalo milk and skimmed milk are required to produce 20 litres of whole milk? (3 marks)

10. [13-14 Final Exam, #1]

In a farm, there are some chickens and pigs. There are altogether 38 heads and 116 feet among these livestock. Find the number of pigs in the farm. (3 marks)

11. [14-15 Mid-term, 2]

(a) Draw the graphs of $2(x-3) + y = -9$ and $7-3y = 2x$ on the rectangular coordinate plane in **Figure 1** by completing the following tables first.

(i) $2(x-3) + y = -9$

(ii) $7-3y = 2x$

x	-2		0
y		-1	

x		2	
y	3		-1

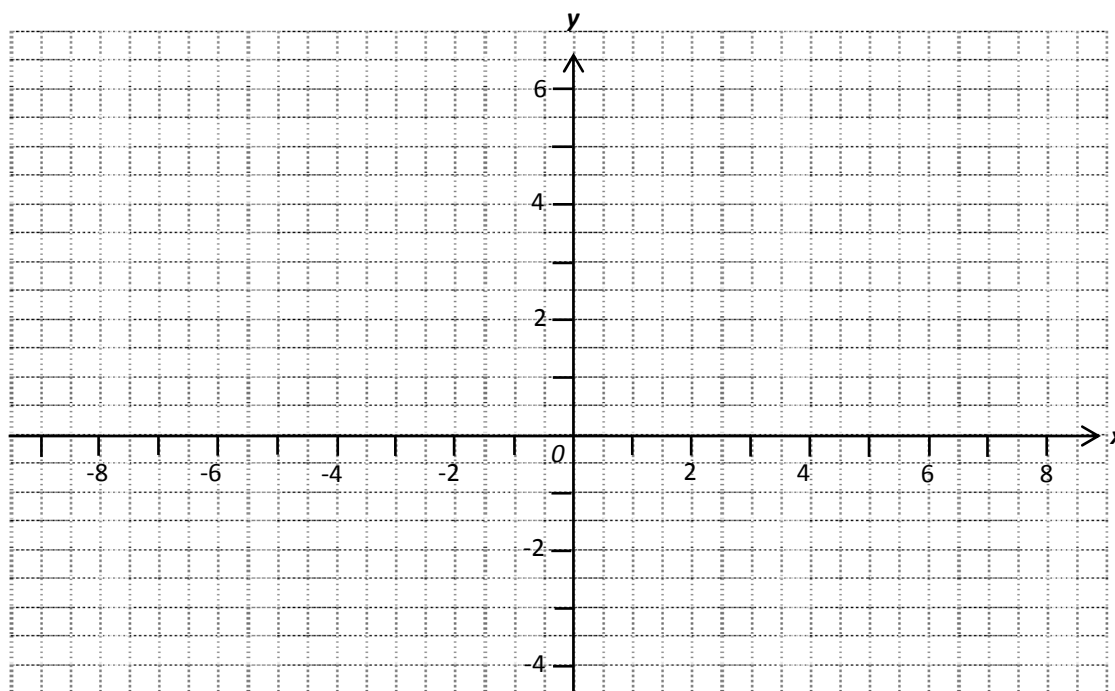


Figure 1

(b) Hence, the solution of $\begin{cases} 2(x-3) + y = -9 \\ 7-3y = 2x \end{cases}$ is $x = \underline{\hspace{2cm}}$, $y = \underline{\hspace{2cm}}$.

(c) If $(4, a)$ is a point on the graph of $2(x-3) + y = -9$, write down the value of a .

12. [14-15 Standardized Test #6]

It is given that x and y are the tens digit and units digit of a two-digit number respectively, where $x > y$. The difference of the digits of the number is 3. When the digits are reversed, the sum of the new number and the original number is 143. By setting up two equations in x and y , find the value of the original two-digit number. **(3 marks)**

13. [14-15 Final Exam #9]

On a highway, car A and car B travel in the same direction from the same starting point. Car A is faster than car B by 15 km/h. After two hours, the total distance travelled by two cars is 300 km. Find the speeds of car A and car B . **(3 marks)**

14. [15-16 Final Exam #3]

A church is 2400 m away from Peter's home. To go from home to church in weekend, Peter spent 10 minutes walk and 8 minutes run on Saturday and spent 15 minutes walk and 6 minutes run on Sunday. Find the walking speed and running speed of Peter in m/min. **(3 marks)**

15. [15-16 Standardized Test #1]

(a) Complete the following tables.

(2 marks)

(i) $x - 2y = 6$

x	-2	0	4
y			

(ii) $y - 2x = -3$

x	2	3	4
y			

- (b) Using the tables in (a), draw the graphs of $x - 2y = 6$ and $y - 2x = -3$ on the rectangular coordinate plane in **Figure 1**. **(1 mark)**

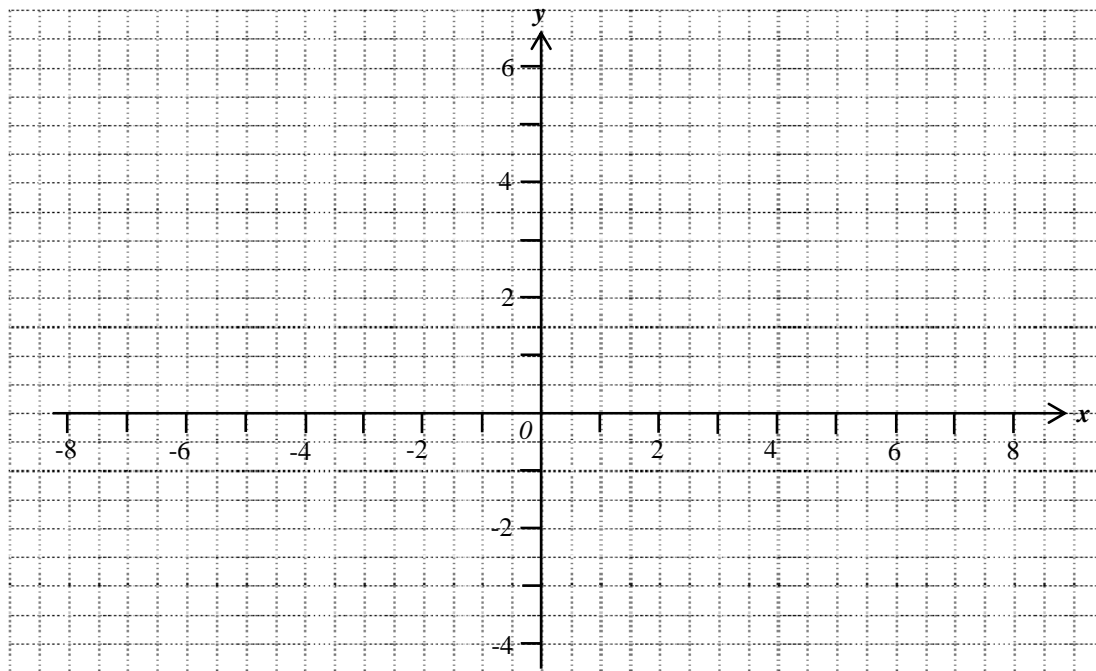


Figure 1

- (c) Using the result of (b), the solution of $\begin{cases} x - 2y = 6 \\ y - 2x = -3 \end{cases}$ is $x = \underline{\hspace{2cm}}$, $y = \underline{\hspace{2cm}}$. **(1 mark)**

16. [15-16 Standardized Test #5]

In a Mathematics test, the average score of S.2G is 35, the average score of S.2H is 28 and the average score of both classes is 32. It is given that the number of S.2G students is more than that of S.2H by 10. If there are x students in S.2G and y students in S.2H, by setting up two equations in x and y , find the numbers of students in S.2G and S.2H respectively. **(3 marks)**

17. [15-16 Standardized Test #7]

Solve $\begin{cases} 2^{y-2x} = \frac{1}{2} \\ 25^{x+y} = 5^{4y-x} \end{cases}$. **(3 marks)**

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