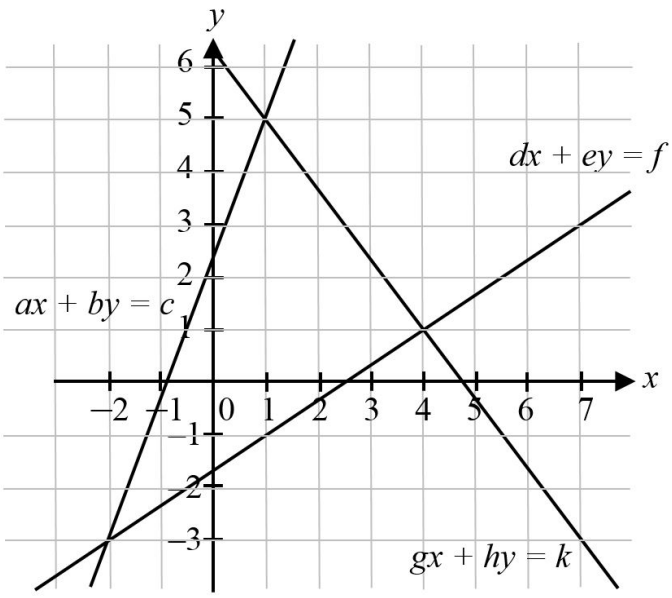
Linear Equations in Two Unknowns

Multiple Choice Questions

[20-21]

1. **[20-21 Standardized Test #1]**
   The figure shows the graphs of the equations $ax+by=c$, $dx+ey=f$ and $gx+hy=k$. Solve $\begin{cases} ax+by=c \\ gx+hy=k \end{cases}$ graphically.



A. $x=-2,\ y=-3$

B. $x=1,\ y=5$

C. $x=4,\ y=1$

D. $x=7,\ y=-3$

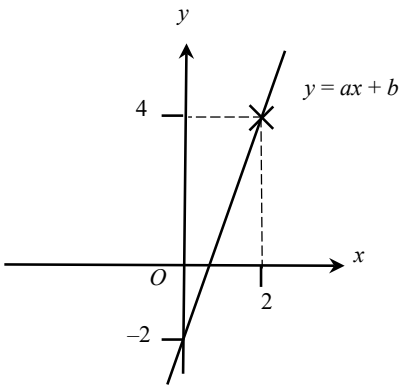
2. [20-21 Final Exam#8]

If $2x - 9y = 5 = -2x - y$, then $y =$

A. 2.
B. 1.
C. −1.
D. −2.

3. [20-21 Final Exam#20]

In the figure, find a and b.



A. $a = 0, b = -2$
B. $a = \frac{1}{3}, b = \frac{2}{3}$
C. $a = 2, b = 4$
D. $a = 3, b = -2$

[21-22]

4. [21-22 Final,#8]

Solve the simultaneous equations $\begin{cases} 3x + 5y = 9 \\ x + 3y = 7 \end{cases}$.

A. $x = -3, y = 2$
B. $x = -2, y = 3$
C. $x = 2, y = -3$
D. $x = 3, y = -2$

5. [21-22 Final,#12]

How many solutions do the simultaneous equations $\begin{cases} 3x - 2y + 8 = 0 \\ 6x - 4y + 8 = 0 \end{cases}$ have?

A. 0
B. 1
C. 2
D. Infinitely many

[22-23]

6. [22-23 Mid-Year,#11]

Let p, q and r be non-zero numbers. If $3r = 2q$ and $p : q = 5 : 6$, then $\dfrac{5p + r}{3q - r} =$

A. $\dfrac{7}{4}$.

B. $\dfrac{28}{15}$.

C. $\dfrac{29}{14}$.

D. $\dfrac{34}{9}$.

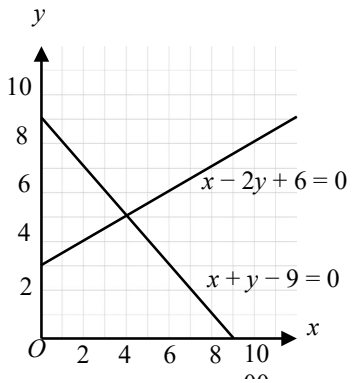
7. [22-23 Standardized Test,#1]

Solve $\begin{cases} 3x - 4y = -15 \\ 5x + 4y = 39 \end{cases}$.

A. $x = -3$ and $y = -6$
B. $x = -3$ and $y = 6$
C. $x = 3$ and $y = -6$
D. $x = 3$ and $y = 6$

8. [22-23 Final,#2]

The figure shows the graphs of $x - 2y + 6 = 0$ and $x + y - 9 = 0$. The solution of $\begin{cases} x-2y+6=0 \\ x+y-9=0 \end{cases}$ is



A. (4, 6) .
B. (4, 5) .
C. (5, 4) .
D. (5, 5) .

9. [22-23 Final,#16]

Which of the following simultaneous equations have no solution?

A. $\begin{cases} 2y - 4x + 10 = 0 \\ 0.5y - x + 2.5 = 0 \end{cases}$

B. $\begin{cases} 3x - y - 7 = 0 \\ 2y - 6x - 8 = 0 \end{cases}$

C. $\begin{cases} y - x - 5 = 0 \\ y + x + 3 = 0 \end{cases}$

D. $\begin{cases} y - 4x + 1 = 0 \\ y - 2x = 0 \end{cases}$

[23-24]

10. [23-24 Standardized Test,#3]

Which of the following points does NOT lie on the graph of the equation $x-4y-6=0$ **?**

A. $(6,0)$
B. $(10,1)$
C. $(-10,-4)$
D. $(2,-2)$

11. [23-24 Standardized Test,#4]

If $\begin{cases} x-2y=6 \\ y-4x=4 \end{cases}$, then $x+y=$

A. -6 .
B. -4 .
C. -2 .
D. 9 .

12. [23-24 Final,#8]

If $(1, b)$ is a solution of the equation $3x + 2y = 6$, where b is a constant, find b.

A. 1
B. $\frac{2}{3}$
C. $\frac{3}{2}$
D. $\frac{4}{3}$

13. [23-24 Final,#20]

Solve the simultaneous equations $\begin{cases} \frac{1}{a}+\frac{2}{b}=3 \\ \frac{2}{a}-\frac{5}{b}=15 \end{cases}$.

A. $a=\frac{1}{5},\ b=-1$
B. $a=\frac{1}{5},\ b=1$
C. $a=5,\ b=-1$
D. $a=5,\ b=1$

~End~

Linear Equations in Two Unknowns

Conventional Questions

[20-21]

1. [20-21 standardized Test #4]

If the perimeter of a rectangle is 60 cm and its length (l cm) is 4 cm longer than its width (w cm). Find the width of the rectangle by setting up a pair of simultaneous equations in l and w. **(3 marks)**

2. [20-21 standardized Test #8]

(a) Solve $\begin{cases} 5a+2b=1 \\ -2a+5b=17 \end{cases}$. **(2 marks)**

(b) Hence, solve $\begin{cases} 5x+2y=xy \\ -2x+5y=17xy \end{cases}$. **(2 marks)**

3. [20-21 Final Exam #10]

Solve the simultaneous equations $\begin{cases} 3x-4y=8 \\ -2x+y=3 \end{cases}$. **(3 marks)**

4. [20-21 Final Exam #12]

Miffy and Dan have a total of 402 stickers. If Miffy uses 18 stickers to decorate her organizer, the remaining stickers she has will be 3 times as many as Dan has. Find the number of stickers Dan has. **(3 marks)**

[21-22]

5. [21-22 Final,#6]

The total price of 3 shirts and 4 dresses is \$1100. If a dress is \$58 more expensive than a shirt, find the price of a shirt and the price of a dress.

(4 marks)

Linear Equations in Two Unknowns

[22-23]

6. [22-23 Standardized Test,#3]

Solve $x + 2y = -2x + y = 5$. **(3 marks)**

7. [22-23 Standardized Test,#6]

The price of 8 apples is the same as the price of 15 oranges while the total price of 10 apples and 6 oranges is \$99 . Find the prices of an apple and an orange respectively.

(4 marks)

8. [22-23 Final,#7]

The total price of 3 pens and 5 rulers is \$78 and the total price of 5 pens and 3 rulers is \$66. Find the total price of a pen and a ruler.

(4 marks)

[23-24]

9. [23-24 Standardized Test,#4]

The price of 6 apple pies and 7 egg tarts is \$184 while the price of 4 apple pies and 3 egg tarts is \$96. Find the price of an apple pie. **(3 marks)**

10. [23-24 Final,#12]

Figure 5 shows a rectangle $ABCD$ with $AB = (3x-1)$ cm , $BC = (10-x)$ cm , $CD = (2y+1)$ cm and $AD = (x+y-3)$ cm . Someone claims that the area of the rectangle $ABCD$ is greater than $65\ \text{cm}^2$. Do you agree? Explain your answer. **(4 marks)**

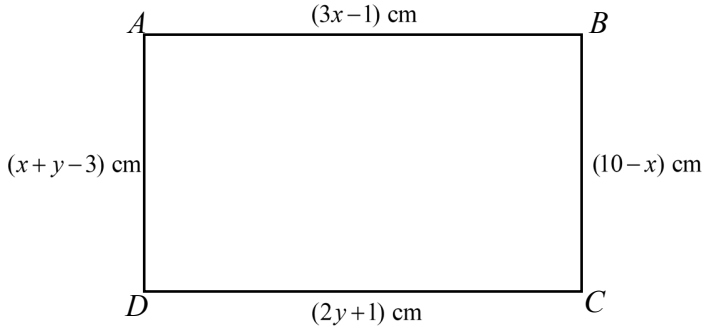


Figure 5

~End~