

# Math 05 Practice

linear equations and more

Generated by WeBWork

Prepared by Y. Hu

## Version 1

---

### Problem 1.

Given  $a = -2$  and  $b = -4$ , evaluate the expression given below.

$$a^2 + b^2a + ab$$

- A. 28
  - B. 36
  - C. -20
  - D. 20
- 

### Problem 2.

Solve for  $x$ .

$$-2(-4x + 5) = 20 - 2x$$

- A.  $x = 5$
  - B.  $x = 2$
  - C.  $x = 4$
  - D.  $x = 3$
- 

### Problem 3.

Solve for  $x$ .

$$\frac{x-3}{4} + \frac{-2}{5} = \frac{x-6}{5}$$

- A.  $x = (-2)$
  - B.  $x = (-3)$
  - C.  $x = (3)$
  - D.  $x = (-1)$
- 

### Problem 4.

Solve for  $x$ .

$$z = 6x + 8y$$

- A.  $x = \frac{z}{6} - 8y$
- B.  $x = \frac{z + 8y}{6}$
- C.  $x = \frac{z - 8y}{6}$
- D.  $x = 6(z - 8y)$

---

**Problem 5.**

If  $n$  represents a number, which equation is a correct translation of the sentence?

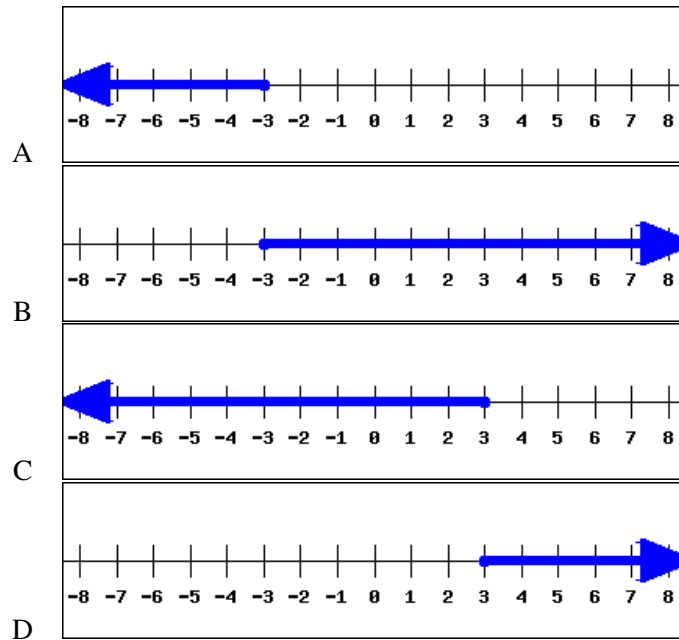
11 subtracted from 9 times a number is 7.

- A.  $9(11 - n) = 7$
  - B.  $9n - 11 = 7$
  - C.  $9(n - 11) = 7$
  - D.  $11 - 9n = 7$
- 

**Problem 6.**

Find the graph of the solution to the inequality.

$$-8x - 4 \geq -x + 17$$

**Problem 7.**

What is the value of the  $y$ -coordinate of the solution to the system of equations.

$$\begin{aligned} -3x + 3y &= -12 \\ x + y &= 6 \end{aligned}$$

- A.  $y = 1$
- B.  $y = -3$
- C.  $y = 3$
- D.  $y = -1$

## Version 2

---

### Problem 1.

Given  $a = -5$  and  $b = 3$ , evaluate the expression given below.

$$ba + a^2 + b^2a$$

- A. 5
  - B.  $-35$
  - C. 55
  - D.  $-85$
- 

### Problem 2.

Solve for  $x$ .

$$2x - 22 = 2(3x + 5)$$

- A.  $x = -9$
  - B.  $x = -7$
  - C.  $x = -10$
  - D.  $x = -8$
- 

### Problem 3.

Solve for  $x$ .

$$\frac{x+8}{15} = \frac{x+4}{9}$$

- A.  $x = (5)$
  - B.  $x = (-5)$
  - C.  $x = (-1)$
  - D.  $x = (2)$
- 

### Problem 4.

Solve for  $y$ .

$$z = 7x + 6y$$

- A.  $y = \frac{z + 7x}{6}$
- B.  $y = \frac{z}{6} - 7x$
- C.  $y = 6(z - 7x)$
- D.  $y = \frac{z - 7x}{6}$

---

**Problem 5.**

If  $z$  represents a number, which equation is a correct translation of the sentence?

71 is 98 subtracted from 3 times a number.

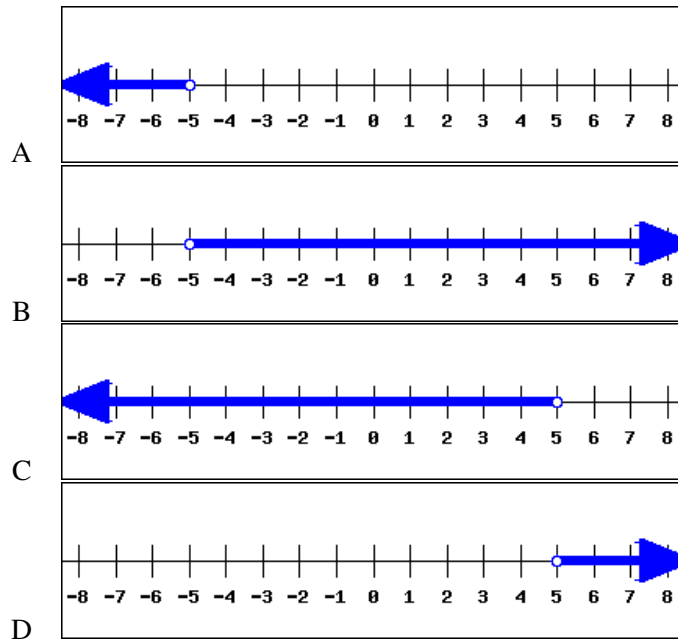
- A.  $71 = 3(98 - z)$
- B.  $71 = 98 - 3z$
- C.  $71 = 3(z - 98)$
- D.  $71 = 3z - 98$

---

**Problem 6.**

Find the graph of the solution to the inequality.

$$-5x - 3 > 8x + 62$$



---

**Problem 7.**

What is the value of the  $x$ -coordinate of the solution to the system of equations.

$$\begin{aligned} 3x + y &= -6 \\ -2x + 3y &= 4 \end{aligned}$$

- A.  $x = -1$
- B.  $x = -4$
- C.  $x = -2$
- D.  $x = -3$

### Version 3

---

**Problem 1.**

Given  $a = 5$  and  $b = -10$ , evaluate the expression given below.

$$ab + a^2 + b^2a$$

- A.  $-575$
  - B.  $475$
  - C.  $-525$
  - D.  $525$
- 

**Problem 2.**

Solve for  $x$ .

$$-66 + 2x = 2(-4x - 3)$$

- A.  $x = 8$
  - B.  $x = 7$
  - C.  $x = 5$
  - D.  $x = 6$
- 

**Problem 3.**

Solve for  $x$ .

$$\frac{3x}{4} + \frac{1}{3} = \frac{11}{6}$$

- A.  $x = (3)$
  - B.  $x = (5)$
  - C.  $x = (2)$
  - D.  $x = (4)$
- 

**Problem 4.**

Solve for  $y$ .

$$z = 9x + 7y$$

- A.  $y = 7(z - 9x)$
- B.  $y = \frac{z}{7} - 9x$
- C.  $y = \frac{z - 9x}{7}$
- D.  $y = \frac{z + 9x}{7}$

---

**Problem 5.**

If  $x$  represents a number, which equation is a correct translation of the sentence?

85 is 9 less than 8 times a number.

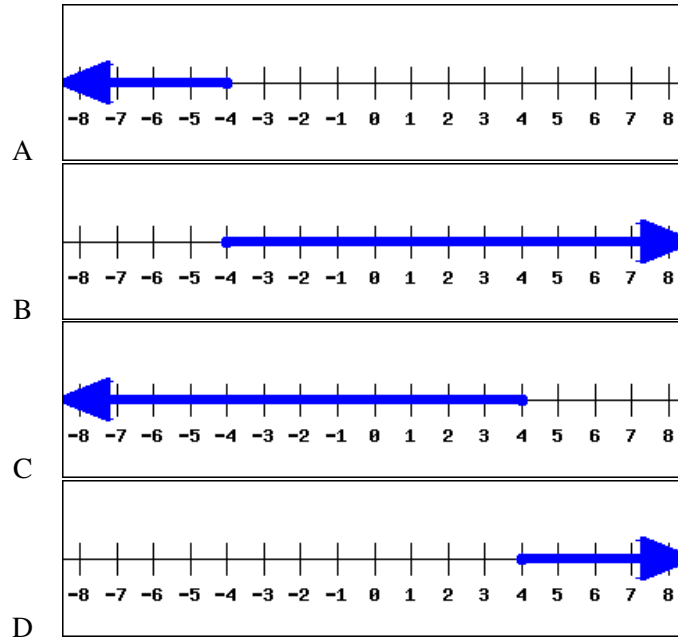
- A.  $85 = 8x - 9$
- B.  $85 = 8(9 - x)$
- C.  $85 = 8(x - 9)$
- D.  $85 = 9 - 8x$

---

**Problem 6.**

Find the graph of the solution to the inequality.

$$-4x + 5 \leq 6x - 35$$



---

**Problem 7.**

What is the value of the  $x$ -coordinate of the solution to the system of equations.

$$\begin{aligned} -x + 2y &= -13 \\ -4x + 5y &= -37 \end{aligned}$$

- A.  $x = 4$
- B.  $x = 5$
- C.  $x = 3$
- D.  $x = 2$

## Version 4

---

### Problem 1.

Given  $a = -3$  and  $b = -5$ , evaluate the expression given below.

$$ba + a^2b + b^2$$

- A. 55
  - B. -5
  - C. -35
  - D. -55
- 

### Problem 2.

Solve for  $x$ .

$$2(4 - 3x) = 62 + 3x$$

- A.  $x = -10$
  - B.  $x = -6$
  - C.  $x = -4$
  - D.  $x = -8$
- 

### Problem 3.

Solve for  $x$ .

$$\frac{5x}{12} + \frac{5}{1} = \frac{20}{3}$$

- A.  $x = (-4)$
  - B.  $x = (-3)$
  - C.  $x = (4)$
  - D.  $x = (5)$
- 

### Problem 4.

Solve for  $y$ .

$$z = 9x + 8y$$

- A.  $y = \frac{z}{8} - 9x$
- B.  $y = \frac{z - 9x}{8}$
- C.  $y = \frac{z + 9x}{8}$
- D.  $y = 8(z - 9x)$



---

**Problem 5.**

If  $n$  represents a number, which equation is a correct translation of the sentence?

26 is 25 less than 2 times a number.

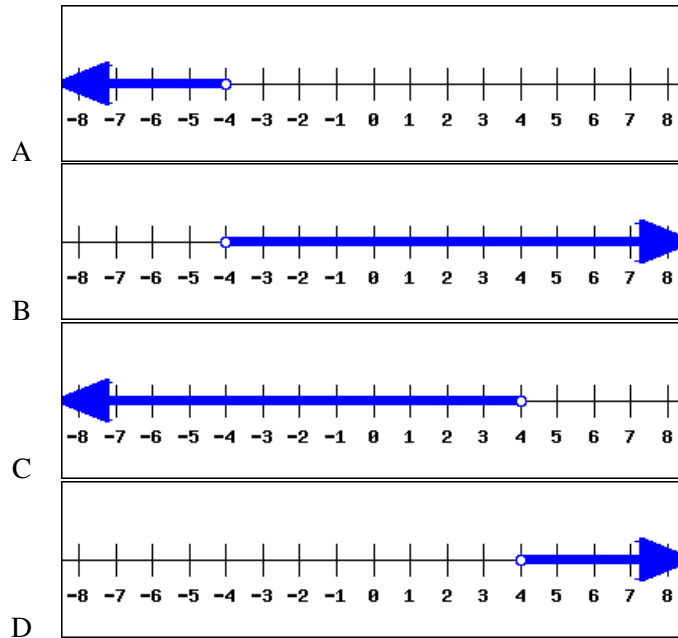
- A.  $26 = 25 - 2n$
- B.  $26 = 2(n - 25)$
- C.  $26 = 2n - 25$
- D.  $26 = 2(25 - n)$

---

**Problem 6.**

Find the graph of the solution to the inequality.

$$-3x + 9 > 7x + 49$$



---

**Problem 7.**

What is the value of the  $y$ -coordinate of the solution to the system of equations.

$$\begin{aligned} 4x + 3y &= 14 \\ 4x + 5y &= 10 \end{aligned}$$

- A.  $y = -2$
- B.  $y = -4$
- C.  $y = 0$
- D.  $y = -6$

## Version 5

---

### Problem 1.

Given  $a = 3$  and  $b = -3$ , evaluate the expression given below.

$$ba + a^2 + b^2a$$

- A.  $-45$
  - B.  $45$
  - C.  $27$
  - D.  $-27$
- 

### Problem 2.

Solve for  $x$ .

$$2x + 66 = -2(3x - 5)$$

- A.  $x = -9$
  - B.  $x = -7$
  - C.  $x = -11$
  - D.  $x = -5$
- 

### Problem 3.

Solve for  $x$ .

$$\frac{x - 10}{3} = \frac{x - 20}{5}$$

- A.  $x = (-4)$
  - B.  $x = (-5)$
  - C.  $x = (-1)$
  - D.  $x = (-2)$
- 

### Problem 4.

Solve for  $y$ .

$$z = 8x + 6y$$

- A.  $y = 6(z - 8x)$
- B.  $y = \frac{z - 8x}{6}$
- C.  $y = \frac{z}{6} - 8x$
- D.  $y = \frac{z + 8x}{6}$

---

**Problem 5.**

If  $z$  represents a number, which equation is a correct translation of the sentence?

23 is 71 subtracted from 4 times a number.

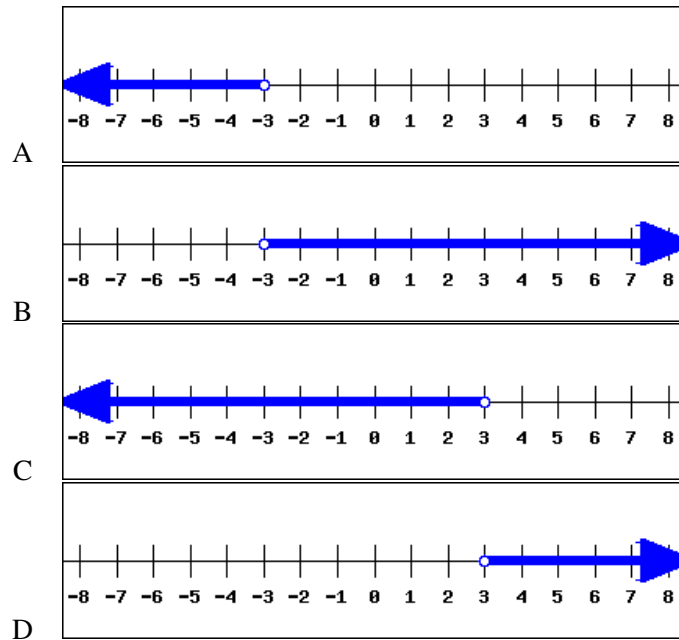
- A.  $23 = 4(z - 71)$
- B.  $23 = 71 - 4z$
- C.  $23 = 4(71 - z)$
- D.  $23 = 4z - 71$

---

**Problem 6.**

Find the graph of the solution to the inequality.

$$3x - 7 < 9x + 11$$



---

**Problem 7.**

What is the value of the  $x$ -coordinate of the solution to the system of equations.

$$\begin{aligned} -4x - y &= 9 \\ -2x + 5y &= -23 \end{aligned}$$

- A.  $x = -3$
- B.  $x = 3$
- C.  $x = -1$
- D.  $x = 1$

## Version 6

---

### Problem 1.

Given  $a = -2$  and  $b = 2$ , evaluate the expression given below.

$$ab + b^2a + a^2$$

- A.  $-8$
  - B.  $-16$
  - C.  $8$
  - D.  $16$
- 

### Problem 2. Solve for $x$ .

$$2(-4x - 4) = -85 + 3x$$

- A.  $x = 11$
  - B.  $x = 9$
  - C.  $x = 7$
  - D.  $x = 5$
- 

### Problem 3.

Solve for  $x$ .

$$\frac{x-4}{3} + \frac{-1}{3} = \frac{x-12}{6}$$

- A.  $x = (-1)$
  - B.  $x = (1)$
  - C.  $x = (-4)$
  - D.  $x = (-2)$
- 

### Problem 4.

Solve for  $x$ .

$$z = 4x + 5y$$

- A.  $x = 4(z - 5y)$
- B.  $x = \frac{z}{4} - 5y$
- C.  $x = \frac{z + 5y}{4}$
- D.  $x = \frac{z - 5y}{4}$

---

**Problem 5.**

If  $x$  represents a number, which equation is a correct translation of the sentence?

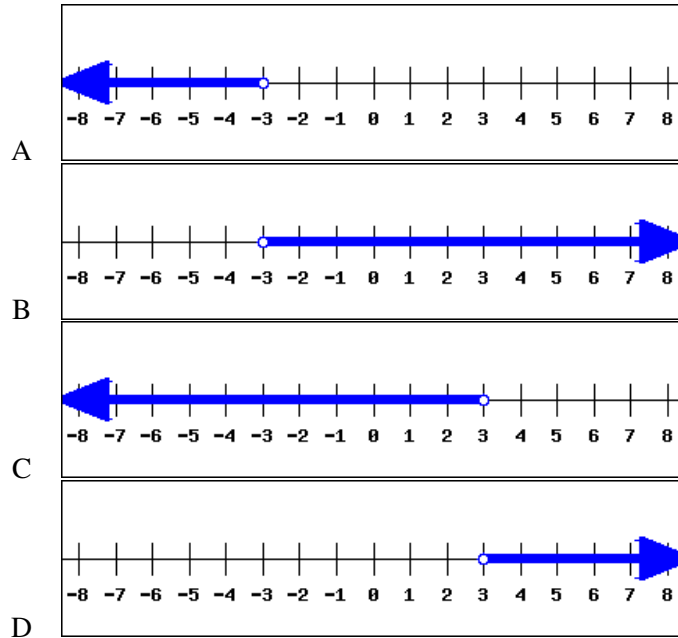
61 less than 10 times a number is 54.

- A.  $10x - 61 = 54$
  - B.  $10(x - 61) = 54$
  - C.  $10(61 - x) = 54$
  - D.  $61 - 10x = 54$
- 

**Problem 6.**

Find the graph of the solution to the inequality.

$$3x - 8 < 5x - 2$$

**Problem 7.**

What is the value of the  $y$ -coordinate of the solution to the system of equations.

$$\begin{aligned} -4x + y &= -15 \\ -4x + 2y &= -10 \end{aligned}$$

- A.  $y = 5$
- B.  $y = 3$
- C.  $y = 4$
- D.  $y = 6$

## Version 7

---

### Problem 1.

Given  $a = -5$  and  $b = 2$ , evaluate the expression given below.

$$b^2 + ba + a^2b$$

- A.  $-64$
  - B.  $44$
  - C.  $64$
  - D.  $-44$
- 

### Problem 2.

Solve for  $x$ .

$$-3x - 38 = -2(-4x - 3)$$

- A.  $x = -6$
  - B.  $x = -2$
  - C.  $x = -4$
  - D.  $x = -8$
- 

### Problem 3.

Solve for  $x$ .

$$\frac{x-4}{9} + \frac{-4}{15} = \frac{x-12}{15}$$

- A.  $x = (-3)$
  - B.  $x = (-4)$
  - C.  $x = (-1)$
  - D.  $x = (-2)$
- 

### Problem 4.

Solve for  $x$ .

$$z = 9x + 3y$$

- A.  $x = \frac{z}{9} - 3y$
- B.  $x = 9(z - 3y)$
- C.  $x = \frac{z - 3y}{9}$
- D.  $x = \frac{z + 3y}{9}$

---

**Problem 5.**

If  $m$  represents a number, which equation is a correct translation of the sentence?

31 subtracted from 10 times a number is 30.

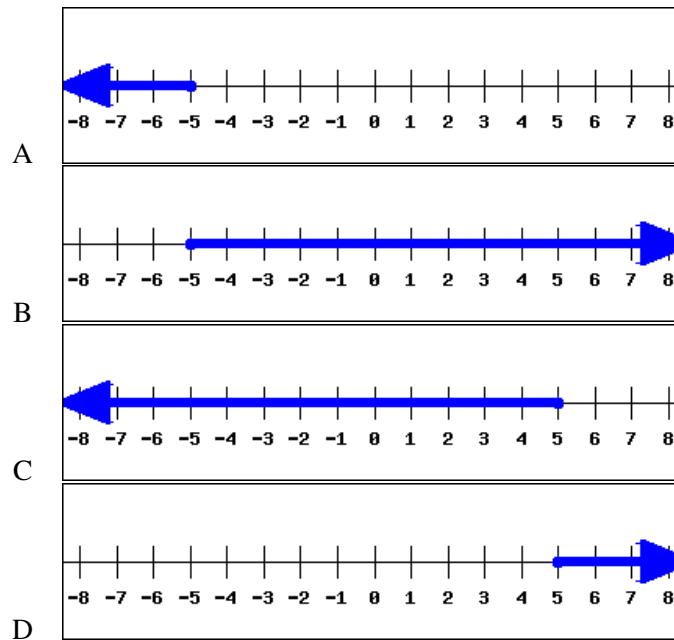
- A.  $10(m - 31) = 30$
- B.  $10m - 31 = 30$
- C.  $31 - 10m = 30$
- D.  $10(31 - m) = 30$

---

**Problem 6.**

Find the graph of the solution to the inequality.

$$-7x - 2 \geq -2x + 23$$



---

**Problem 7.**

What is the value of the  $y$ -coordinate of the solution to the system of equations.

$$\begin{aligned} 2x + 4y &= 6 \\ -3x + 4y &= -19 \end{aligned}$$

- A.  $y = 1$
- B.  $y = -1$
- C.  $y = -2$
- D.  $y = 0$

## Version 8

---

### Problem 1.

Given  $a = 5$  and  $b = -5$ , evaluate the expression given below.

$$b^2 + a^2b + ab$$

- A. 125
  - B. -125
  - C. 75
  - D. 175
- 

### Problem 2.

Solve for  $x$ .

$$-87 + 3x = 2(-3 - 3x)$$

- A.  $x = 9$
  - B.  $x = 13$
  - C.  $x = 7$
  - D.  $x = 11$
- 

### Problem 3.

Solve for  $x$ .

$$\frac{x-4}{12} = \frac{x-12}{30}$$

- A.  $x = \left(-\frac{4}{3}\right)$
  - B.  $x = \left(\frac{2}{3}\right)$
  - C.  $x = \left(-\frac{1}{3}\right)$
  - D.  $x = \left(\frac{1}{3}\right)$
- 

### Problem 4.

Solve for  $y$ .

$$z = 8x + 7y$$

- A.  $y = \frac{z - 8x}{7}$
- B.  $y = 7(z - 8x)$
- C.  $y = \frac{z + 8x}{7}$
- D.  $y = \frac{z}{7} - 8x$



---

**Problem 5.**

If  $k$  represents a number, which equation is a correct translation of the sentence?

66 less than 4 times a number is 71.

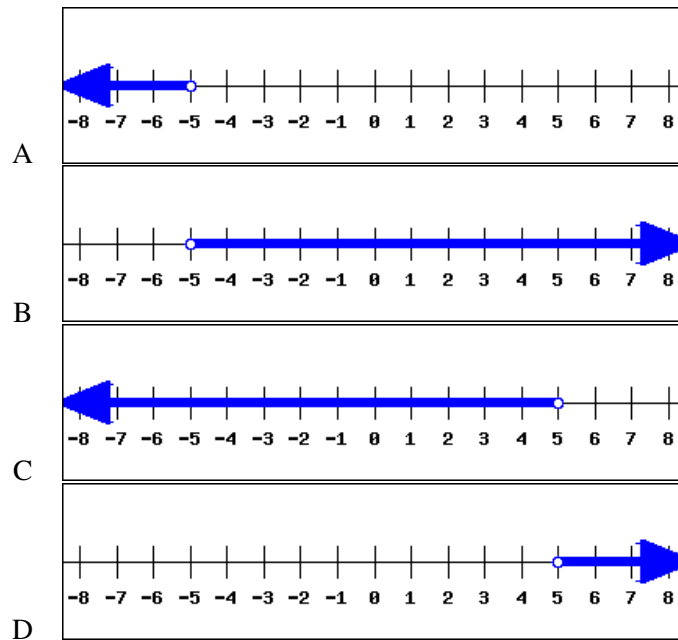
- A.  $4k - 66 = 71$
- B.  $4(k - 66) = 71$
- C.  $66 - 4k = 71$
- D.  $4(66 - k) = 71$

---

**Problem 6.**

Find the graph of the solution to the inequality.

$$-2x - 5 < 3x - 30$$



---

**Problem 7.**

What is the value of the  $y$ -coordinate of the solution to the system of equations.

$$\begin{aligned} -3x + 3y &= -18 \\ 2x + 5y &= 5 \end{aligned}$$

- A.  $y = 3$
- B.  $y = 1$
- C.  $y = -3$
- D.  $y = -1$

## Version 9

---

### Problem 1.

Given  $a = 3$  and  $b = -10$ , evaluate the expression given below.

$$b^2 + ba + a^2b$$

- A.  $-160$
  - B.  $220$
  - C.  $40$
  - D.  $-20$
- 

### Problem 2.

Solve for  $x$ .

$$2(3x + 4) = 2x - 16$$

- A.  $x = -6$
  - B.  $x = -5$
  - C.  $x = -4$
  - D.  $x = -7$
- 

### Problem 3.

Solve for  $x$ .

$$\frac{5}{2} = \frac{1x}{10} + \frac{2}{1}$$

- A.  $x = (-5)$
  - B.  $x = (5)$
  - C.  $x = (-4)$
  - D.  $x = (4)$
- 

### Problem 4.

Solve for  $y$ .

$$z = 6x + 7y$$

- A.  $y = 7(z - 6x)$
- B.  $y = \frac{z - 6x}{7}$
- C.  $y = \frac{z + 6x}{7}$
- D.  $y = \frac{z}{7} - 6x$

---

**Problem 5.**

If  $z$  represents a number, which equation is a correct translation of the sentence?

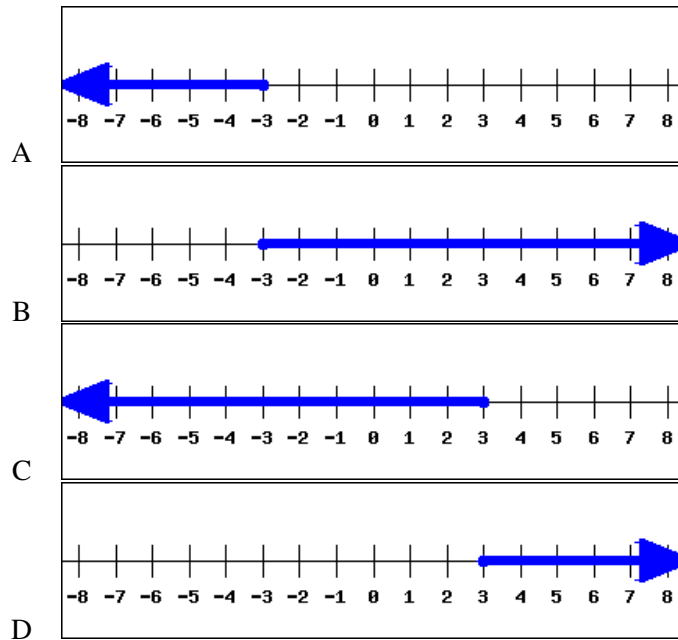
69 less than 7 times a number is 54.

- A.  $69 - 7z = 54$
  - B.  $7(z - 69) = 54$
  - C.  $7(69 - z) = 54$
  - D.  $7z - 69 = 54$
- 

**Problem 6.**

Find the graph of the solution to the inequality.

$$-8x - 6 \leq 8x + 42 \quad [?/A/B/C/D]$$

**Problem 7.**

What is the value of the  $y$ -coordinate of the solution to the system of equations.

$$\begin{aligned} 3x + 3y &= -9 \\ -2x - y &= 7 \end{aligned}$$

- A.  $y = 1$
- B.  $y = 0$
- C.  $y = 2$
- D.  $y = -1$

## Version 10

---

### Problem 1.

Given  $a = -3$  and  $b = -10$ , evaluate the expression given below.

$$a^2 + ba + b^2a$$

- A.  $-321$
  - B.  $339$
  - C.  $261$
  - D.  $-261$
- 

### Problem 2.

Solve for  $x$ .

$$2(4x + 5) = 5 + 3x$$

- A.  $x = -3$
  - B.  $x = -1$
  - C.  $x = 0$
  - D.  $x = -2$
- 

### Problem 3.

Solve for  $x$ .

$$\frac{10}{1} = \frac{5x}{6} + \frac{15}{2}$$

- A.  $x = (3)$
  - B.  $x = (-3)$
  - C.  $x = (-1)$
  - D.  $x = (2)$
- 

### Problem 4.

Solve for  $y$ .

$$z = 6x + 8y$$

- A.  $y = \frac{z + 6x}{8}$
- B.  $y = 8(z - 6x)$
- C.  $y = \frac{z - 6x}{8}$
- D.  $y = \frac{z}{8} - 6x$

---

**Problem 5.**

If  $l$  represents a number, which equation is a correct translation of the sentence?

82 less than 8 times a number is 31.

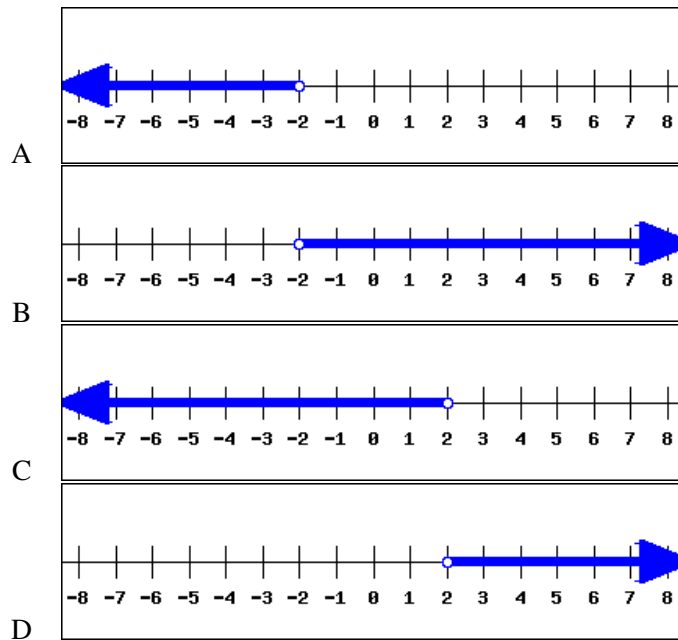
- A.  $8(82 - l) = 31$
- B.  $8l - 82 = 31$
- C.  $82 - 8l = 31$
- D.  $8(l - 82) = 31$

---

**Problem 6.**

Find the graph of the solution to the inequality.

$$-2x + 5 < 4x + 17$$



---

**Problem 7.**

What is the value of the  $y$ -coordinate of the solution to the system of equations.

$$\begin{aligned} -2x + 2y &= 18 \\ 4x + 2y &= -12 \end{aligned}$$

- A.  $y = 4$
- B.  $y = 5$
- C.  $y = 3$
- D.  $y = 6$

Answers.

Version 1.

1.C 2.D 3.D 4.C 5.B 6.A 7.A

Version 2.

1.B 2.D 3.D 4.D 5.D 6.A 7.C

Version 3.

1.B 2.D 3.C 4.C 5.A 6.D 7.C

Version 4.

1.B 2.B 3.C 4.B 5.C 6.A 7.A

Version 5.

1.C 2.B 3.B 4.B 5.D 6.B 7.C

Version 6.

1.A 2.C 3.D 4.D 5.A 6.B 7.A

Version 7.

1.B 2.C 3.D 4.C 5.B 6.A 7.B

Version 8.

1.B 2.A 3.A 4.A 5.A 6.D 7.D

Version 9.

1.D 2.A 3.B 4.B 5.D 6.B 7.A

Version 10.

1.D 2.B 3.A 4.C 5.B 6.B 7.A