

## Chapters 1-3 Midterm

**Simplify.**

1)  $-(2 + 10n) - 9(n + 3)$

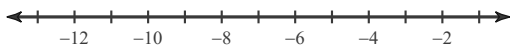
**Solve**

2) 
$$\begin{aligned} 4x - 7y &= -4 \\ -3x + 7y &= -4 \end{aligned}$$

3)  $5 + \left| \frac{k}{10} \right| = 6$

**Solve the compound inequality and graph its solution.**

4)  $5x - 6 < -36$  or  $6x - 6 \geq -36$

**Evaluate the function.**

5)  $h(a) = a^2 - 4$ ; Find  $h(-7)$

**Write the slope-intercept form of the equation of the line described.**

6) through:  $(-4, 4)$  and  $(-2, 3)$

7) through:  $(-3, 1)$ , perp. to  $y = \frac{3}{2}x$

**Solve each system by elimination.**

8)  $7x - 2y = -5$   
 $2x - 6y = 4$

9)  $x + y - 3z = -6$   
 $3x - 2y - 4z = -3$   
 $-2x - y - 4z = -9$

**Solve by substitution.**

10)  $-2x - y = 1$   
 $-2x - 7y = -17$

**Simplify. Write "undefined" for expressions that are undefined.**

11)  $\begin{bmatrix} -5 & 3 & -5 & 0 \end{bmatrix} - \begin{bmatrix} 5 & 6 & -3 & 6 \end{bmatrix}$

12)  $\begin{bmatrix} 2 & 0 \\ 4 & 5 \end{bmatrix} \cdot \begin{bmatrix} -3 & 2 & -6 \\ -1 & -5 & 2 \end{bmatrix}$

**Evaluate.**

13)  $\begin{vmatrix} 1 & 1 \\ 2 & 2 \end{vmatrix}$

**Evaluate the determinant.**

$$14) \begin{bmatrix} -3 & -1 & -5 \\ -5 & -5 & -3 \\ 2 & -5 & -4 \end{bmatrix}$$

**Use Cramer's Rule to solve the system.**

$$15) \begin{aligned} -6x - 2y &= -14 \\ -4x - 5y &= 9 \end{aligned}$$

**Solve each equation.**

$$16) \begin{bmatrix} -4 & -2 \\ -1 & -1 \end{bmatrix} Y = \begin{bmatrix} 14 & -18 \\ 0 & -2 \end{bmatrix}$$

## Chapters 1-3 Midterm

**Simplify.**

1)  $8(5n + 9) - 10(1 - 4n)$

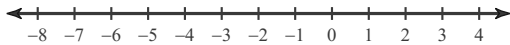
**Solve**

2)  $4x + 3y = 10$   
 $2x - 2y = -16$

3)  $|a + 5| - 9 = -2$

**Solve the compound inequality and graph its solution.**

4)  $2x - 4 \leq -6$  or  $3 - 3x < 3$

**Evaluate the function.**

5)  $g(x) = -3x + 4$ ; Find  $g(-1)$

**Write the slope-intercept form of the equation of the line described.**

6) through:  $(5, -1)$  and  $(0, 5)$

7) through:  $(0, 4)$ , perp. to  $y = -\frac{1}{8}x$

**Solve each system by elimination.**

8)  $10x + 6y = 6$   
 $-4x + 12y = 12$

9)  $-4x + y + 4z = -13$   
 $-4x - 4y - z = -8$   
 $-3x - 2y + z = -7$

**Solve by substitution.**

10)  $y = 6$   
 $-7x - 4y = -10$

**Simplify. Write "undefined" for expressions that are undefined.**

11)  $\begin{bmatrix} -3 \\ 4 \\ -6 \end{bmatrix} + \begin{bmatrix} -3 \\ -3 \\ -2 \end{bmatrix}$

12)  $\begin{bmatrix} -1 & -3 \\ -4 & 6 \end{bmatrix} \cdot \begin{bmatrix} 6 & -2 \\ -1 & -4 \end{bmatrix}$

**Evaluate.**

13)  $\begin{vmatrix} 5 & 0 \\ 1 & -1 \end{vmatrix}$

**Evaluate the determinant.**

$$14) \begin{bmatrix} -2 & -2 & 0 \\ -2 & 0 & -1 \\ -1 & -1 & -5 \end{bmatrix}$$

**Use Cramer's Rule to solve the system.**

$$15) \begin{aligned} 2x + 5y &= -30 \\ -x - 3y &= 18 \end{aligned}$$

**Solve each equation.**

$$16) \begin{bmatrix} -32 \\ -40 \end{bmatrix} = \begin{bmatrix} 2 & 5 \\ 2 & 7 \end{bmatrix} X$$

## Chapters 1-3 Midterm

**Simplify.**

1)  $-5(n - 1) + 10(9n - 5)$

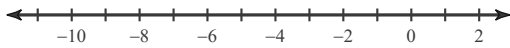
**Solve**

2) 
$$\begin{aligned} -2x + 6y &= 2 \\ -6x + 4y &= -8 \end{aligned}$$

3)  $\frac{|3v|}{9} = 1$

**Solve the compound inequality and graph its solution.**

4)  $v + 1 \leq -5$  or  $1 - 3v < 10$

**Evaluate the function.**

5)  $f(x) = 2x^2 - x$ ; Find  $f(4)$

**Write the slope-intercept form of the equation of the line described.**

6) through:  $(0, 2)$  and  $(-5, -3)$

7) through:  $(-1, 4)$ , perp. to  $y = x + 1$

**Solve each system by elimination.**

8)  $-3x - 3y = -12$   
 $12x - 2y = 20$

9)  $2a + 3b - 4c = -8$   
 $-4a + 3b - 4c = -2$   
 $-2a - b + c = 3$

**Solve by substitution.**

10)  $2x - 4y = -6$   
 $y = 5$

**Simplify. Write "undefined" for expressions that are undefined.**

11)  $\begin{bmatrix} -4 & 3 \\ 5 & 3 \end{bmatrix} - \begin{bmatrix} 5 & -2 \\ -4 & 5 \end{bmatrix}$

12)  $\begin{bmatrix} 4 & 5 & 3 \\ 1 & 4 & -5 \end{bmatrix} \cdot \begin{bmatrix} -3 & -1 \\ 0 & 3 \\ -6 & -4 \end{bmatrix}$

**Evaluate.**

13)  $\begin{vmatrix} 3 & 1 \\ -3 & -2 \end{vmatrix}$



**Evaluate the determinant.**

$$14) \begin{bmatrix} 3 & -3 & 4 \\ -2 & 3 & 0 \\ 5 & 3 & 4 \end{bmatrix}$$

**Use Cramer's Rule to solve the system.**

$$15) \begin{aligned} 3x - 6y &= 16 \\ -x - 6y &= 16 \end{aligned}$$

**Solve each equation.**

$$16) \begin{bmatrix} -10 & -9 \\ -10 & -10 \end{bmatrix} X = \begin{bmatrix} 2 & -15 \\ 0 & -10 \end{bmatrix}$$

## Chapters 1-3 Midterm

**Simplify.**

1)  $8(7x + 2) - 2(x - 8)$

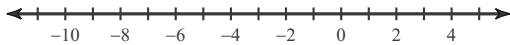
**Solve**

2)  $-2x - 7y = 21$   
 $y = -5$

3)  $|-9v| - 7 = 2$

**Solve the compound inequality and graph its solution.**

4)  $2n + 4 \geq 8$  or  $3 + 3n < -15$

**Evaluate the function.**

5)  $f(x) = 3x - 5$ ; Find  $f(7)$

**Write the slope-intercept form of the equation of the line described.**

6) through:  $(0, 0)$  and  $(5, -5)$

7) through:  $(2, -5)$ , perp. to  $y = -\frac{1}{4}x + 3$

**Solve each system by elimination.**

8)  $3x - y = -9$   
 $9x + 5y = -27$

9)  $-2x + 4y - 3z = -3$   
 $2x - y - 3z = -15$   
 $4x + 2y + 4z = 0$

**Solve by substitution.**

10)  $-5x - 8y = 13$   
 $6x + 6y = 6$

**Simplify. Write "undefined" for expressions that are undefined.**

11)  $\begin{bmatrix} -2 & 5 & -4 & 2 \end{bmatrix} - \begin{bmatrix} -1 & 0 & 2 & -5 \end{bmatrix}$

12)  $\begin{bmatrix} -4 & 5 \\ 2 & 5 \end{bmatrix} \cdot \begin{bmatrix} 4 & -4 \\ 2 & -6 \end{bmatrix}$

**Evaluate.**

13)  $\begin{vmatrix} 3 & -3 \\ 5 & -1 \end{vmatrix}$

**Evaluate the determinant.**

$$14) \begin{bmatrix} -1 & -4 & 5 \\ -2 & 0 & -5 \\ 5 & -4 & -5 \end{bmatrix}$$

**Use Cramer's Rule to solve the system.**

$$15) \begin{cases} 3x + 3y = -1 \\ 5x + y = -6 \end{cases}$$

**Solve each equation.**

$$16) \begin{bmatrix} -11 & -3 \\ 10 & 2 \end{bmatrix} Z = \begin{bmatrix} -14 & 38 \\ 12 & -28 \end{bmatrix}$$