**Unit 2**

**Inequalities**

Graphing Compound Inequalities - 1

Graphing Compound Inequalities - 2

Graphing Inequalities - 1

Graphing Inequalities - 2

Inequalities – Statement Problems - 1

Inequalities – Statement Problems - 2

Multi – Step Inequalities

One – Step Inequalities - 1

One – Step Inequalities - 2

Open – Ended Question – Solving Inequalities – 1

Open - Ended Question - Solving Inequalities – 2

Open – Ended Question – Solving Inequalities – 3

Solving and Graphing Compound Inequalities – 1

Solving Inequalities – 1

Solving Inequalities – 2

Two – Step Inequalities - 2

**Assessment Anchor: A1.1.3 Linear Inequalities**

**Anchor Descriptor/ Eligible Content**

**A1.1.3.1** Write, Solve, and/or graph linear inequalities using various methods

**A1.1.3.1.1** Write or solve compound Inequalities and/or graph their solution sets on a number line (may include absolute value inequalities)

**A1.1.3.1.2** Identify or graph the solution set to a linear inequality on a number line.

**A1.1.3.1.3** Interpret solutions to problems in the context of the problem situation. Note: Linear inequalities only.

Keystone Practice Set

Algebraic Expression

1. Which graph represents x > 4 and x < 0?
2. 
3. 
4. 
5. 
6. Which graph represents x ≤ -2 or x > 4
7. 
8. 
9. 
10. 
11. Which graph represents – 1 < x < 3?
12. 
13. 
14. 
15. 
16. Which graph represents 3 > x or x > -1?
17. 
18. 
19. 
20. 
21. Which graph represents x ≥ 0 AND x ≤ 0?
22. 
23. 
24. 
25. 
26. Which graph represents x ≤ 5 AND x > -2?
27. 
28. 
29. 
30. 
31. Which graph represents x < 2 or x > 2?
32. 
33. 
34. 
35. 
36. Which graph represents x ≥ 3 OR x ≤ 3?
37. 
38. 
39. 
40. 
41. Which graph represents x > 0?
42. 
43. 
44. 
45. 
46. Which graph represents x ≤ - 1?
47. 
48. 
49. 
50. 
51. Which is the graph x < - 2?
52. 
53. 
54. 
55. 
56. Which graph represents 3 > x?
57. 
58. 
59. 
60. 
61. Which graph represents x ≠ 2?
62. 
63. 
64. 
65. 
66. Which graph represents x > 2?
67. 
68. 
69. 
70. 
71. Which graph represents x ≥ 5?
72. 
73. 
74. 
75. 
76. Which graph represents 0 ≤ x?
77. 
78. 
79. 
80. 

Write and inequality that represents each problem.

1. Nine more than three-fourths of a number is at least forty-two.
2. n – 9 ≤ 42
3. n – 9 ≥ 42
4. n + 9 ≤ 42
5. n + 9 ≥ 42
6. Six less than two-thirds of a number is at most 42.
7. n – 6 ≤ 42
8. n + 6 ≤ 42
9. n - 6 ≥ 42
10. n + 6 42
11. The sum of seven-tenths of a number and 14 is less than 49.
12. n -14 49
13. n +14 49
14. n -14 49
15. n +14< 49
16. Ten is no more than four times the sum of twice a number and three.
17. 10 ≥ 4(2n+3)
18. 10 ≤ 4(2n+3)
19. 10 > 4(2n+3)
20. 10 < 4(2n+3)
21. Michael is saving to buy a $2000 car for which he has already saved $540. If he earns $15 for every lawn he mows, which inequality shows how many lawns he will have to mow to at least enough money to purchase the car?
22. 15x + 540 ≥ 2000
23. 15x - 540 > 2000
24. 15x + 540 ≤ 2000
25. 15x - 540 < 2000
26. Ellen has $200 in saving a savings account she Plans to deposit $25 each week. Which inequality can be used to determine the number of weeks it will take to save at least $2300?
27. 25w + 200 < 2300
28. 25w + 200 ≤ 2300
29. 25w + 200 > 2300
30. 25w + 200 ≥ 2300
31. The Smith family budget state that at most they can pay for electronic devices is $175 per month. The fees and taxes cost $25 per month. Which inequality could be used to determine the amount the smith Family can spend on electronic devices?
32. x + 25 < 175
33. x + 25 > 175
34. x + 25 ≤ 175
35. x + 25 ≥ 175
36. George can spend at most $12000 for a car by placing a deposit of $300 and agreeing to pay $350 per month. Which inequality will determine the number of months that George will make payment for the car?
37. 350 x + 300 < 12000
38. 350 x + 300 12000
39. 350 x + 300 > 12000
40. 350 x + 300 ≥ 12000
41. What is the solution set for this inequality?

-3(7x + 3) ≤ 6x

A. x ≥

B. x ≤

C. Empty Set

D. All Real Numbers

1. What is the solution set for this inequality?

2x +4 > 2(3+x)

1. x <
2. x >
3. Empty Set
4. All Real Numbers
5. What is the solution set for this inequality?

7 + x ≤ 2(x+3) + 2

1. x ≥ -1
2. x ≤ -1
3. Empty Set
4. All real numbers
5. What is solution set for this inequality?

3(2-x) < 10 – 3(x – 6)

1. x > -2
2. x < -2
3. Empty Set
4. All Real numbers
5. What is the solution set for this inequality?

8x + 2 (1-3x) ≤ 12

1. x ≤ 7
2. x ≤ 5
3. Empty Set
4. All Real numbers
5. What is the solution set for this inequality?

-8x ≥ -48

A. x ≥ -6

B. x ≥ 6

C. x

D. x ≤ -6

1. What is the solution set for this inequality?

10x > -200

1. x > 20
2. x < -20
3. x < 20
4. x > -20
5. What is the solution set for this inequality?

< -12

1. x > 72
2. x > 2
3. x < 72
4. x < 2
5. What is the solution set for this inequality?

x ≤ -12

1. x ≥ -18
2. x ≤ -18
3. x ≤ 18
4. x ≥ 18
5. What is the solution set for this inequality?

x ≤ -

1. x ≥ -
2. x ≤
3. x ≥
4. x ≤ -
5. What is the solution set for this inequality?

x ≥ -12

1. x ≥ -9
2. x ≥ -16
3. x ≤ 9
4. x ≥ 16
5. What is the solution set for this inequality?

-24 > - 2x

A. x > 12

B. x < -12

C. x < - 48

D. x < 12

1. What is the solution set for this inequality?

x < -12

1. x > -8
2. x > 18
3. x < 18
4. x < 8
5. What is the solution set for this inequality?

-56 ≥ - x

A. x ≥ 49

B. x ≤ 49

C. x ≥ 64

D. x ≥ 56

1. What is the solution set for this inequality?

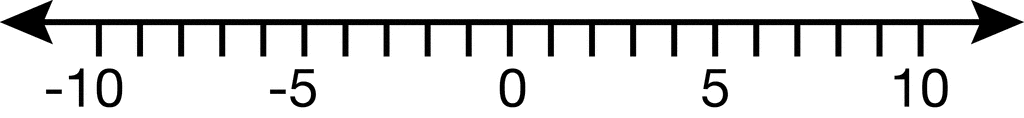
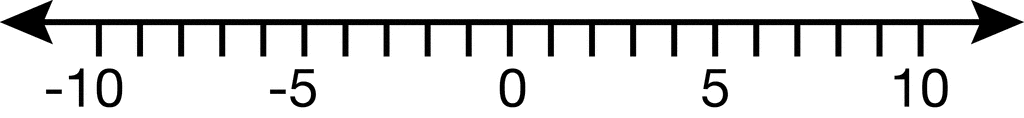
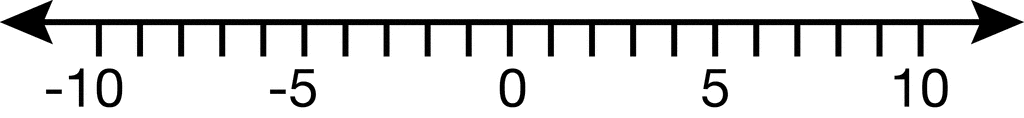
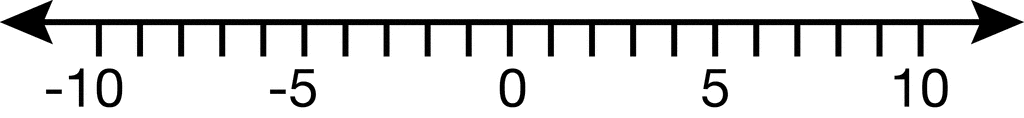
-4 > 8x

A. x > -2

B. x < - 2

C. x > - 0.5

D. x < - 0.5

1. Madeline’s dog weighs 96 pounds. A healthy weight is less than 75 pounds. If the dog can lose an average of 1.5 pounds per week on a vet’s diet directive, after how long will the dog reach a healthy weight?
2. Write an inequality to illustrate how long it will take the dog to reach a healthy weight?
3. Solve the inequality that illustrates how long it will take the dog to reach a healthy weight?
4. How long will it take for the dog to reach a healthy weight?
5. George has $9.00 in his pocket for lunch. If a burger and fries cost $6.75, and each additional item is $0.75, how many additional items can be ordered and stay within budget?
6. Write an inequality to illustrate the number of additional items that can be ordered and stay within the budget.
7. Solve the inequality that illustrated the number of additional items that can be ordered and stay within the budget.
8. How many additional items can be ordered and stay within the budget?
9. The Drama Club needs to break even for each performance. With expenses of $2887 for their first show of the year, and $500 in donations the tickets sold for $7.00 each. How many tickets must be sold for the Drama Club to make a profit?
10. Write an inequality to illustrate how many tickets must be sold for the Drama Club to make a profit.
11. Solve the inequality that illustrates how many tickets must be sold for the Drama Club to make a profit.
12. How many tickets must be sold for the Drama Club to make a profit?
13. Which graph represents 2x – 8 > 2 And -3x + 18 < 0?
14. 
15. 
16. 
17. 
18. Which graph represents -2x ≤ -2 or -5x + 10 > 15?
19. 
20. 
21. 
22. 
23. Which graph represents 12 < 3x +3 <18?
24. 
25. 
26. 
27. 
28. Which graph represents -24 < -6x +12 < -6?
29. 
30. 
31. 
32. 
33. What is the solution set for this inequality?

x + ≥ -

1. x ≥
2. x ≥
3. x ≥
4. What is the solution set for this inequality?

x ≤ -12

1. x ≥ 18
2. x ≤ 18
3. x > 18
4. x < 18
5. What is the solution set for this inequality?

16 > -2x + 14

1. x > - 1
2. x < -1
3. x < -15
4. x > -15
5. What is the solution set for this inequality?

x ≤ -12

1. x ≥ 18
2. x > 18
3. x < 18
4. x ≤ 18
5. What is the solution set for this inequality?

-2x – 18 > - 8x +24

1. x > -7
2. x > 7
3. x > 6
4. x > -6
5. What is the solution set for this inequality?

-5x - 18 ≤ 7(x + 6)

1. x ≤ -5
2. x ≥ -5
3. x ≤ 3
4. x ≥ -3
5. What is the solution set for this inequality?

2x + 5 ≤ 7x + 15

1. x < -2
2. x ≥ -2
3. x ≤ -2
4. x > -2
5. What is the solution set for this inequality?

-16 < 4x + 8 ≤ 24

1. -6 < x < 4
2. -6 < x ≤ 4
3. -6 ≤ x ≤ 4
4. -6 ≤ x < 4
5. What is the solution set for this inequality?

x > 4 and x < -4

1. x > 4
2. x < 4
3. All Real Numbers
4. Empty Set
5. Which graph represent the solution 2x < -4 or x – 3 > 2?
6. 
7. 
8. 
9. 
10. What is the solution set for this inequality?

2x +10 > 18

1. x > 4
2. x > 14
3. x > -4
4. x < 14
5. What is the solution set for this inequality?

-6x + 25 ≤ -11

A. x ≤ -5

B. x ≥ 5

C. x ≤ -6

D. x ≥ 6

60. What is the solution set for this inequality?

4 – 3x > 13

1. x < -4
2. x < -3
3. x < 3
4. x > 4

61. What is the solution set for this inequality?

6 < -4x - 2

1. x < -2
2. x < -1
3. x < 1
4. x < 2

62. What is the solution set for this inequality?

- 4 ≥ -8 – 2x

1. x ≤ 2
2. x ≥ -2
3. x ≥ 6
4. x ≥ -6

**Unit 2**

**Absolute Value**

**Equations and Inequalities**

Absolute Value Equations

Absolute Value Inequalities

Absolute Value Operations

Evaluating Absolute Value

**Assessment Anchor: A1.1.3 Linear Inequalities**

**Anchor Descriptor/ Eligible Content**

**A1.1.3.1** Write, Solve, and/or graph linear inequalities using various methods

**A1.1.3.1.1** Write or solve compound Inequalities and/or graph their solution sets on a number line (may include absolute value inequalities)

**A1.1.3.1.2** Identify or graph the solution set to a linear inequality on a number line.

**A1.1.3.1.3** Interpret solutions to problems in the context of the problem situation.

Note: Linear inequalities only.

1. What is the solution set for the absolute value equation?

= 16

1. -7 and -1
2. -7 and 1
3. 7 and -1
4. 7 and 1
5. What is the solution set for the absolute value equation?

= -10

1. -9 and 1
2. -9 and -1
3. Empty Set
4. All real Numbers
5. What is the solution set for the absolute value equation?

-7 = 14

1. 5 and 9
2. -5 and -9
3. Empty Set
4. All real numbers
5. What is the solution set for the absolute value equation?

- = 16

1. -4 and
2. -4 and
3. Empty Set
4. All real numbers
5. What is the solution set for the absolute value equation?

4 - 10 = -30

1. and -2
2. and 2
3. Empty Set
4. All real numbers
5. What is the solution set for the absolute value equation?

> 16

1. x < 7 or x < -1
2. x > -1 or x > 7
3. x < 7 or x > -1
4. x > 7 or x < -1
5. What is the solution set for the absolute value equation?

≥ - 10

1. x ≥ -9 or x ≥ 1
2. x ≥ -9 or x ≥ -1
3. Empty Set
4. All real Numbers
5. What is the solution set for the absolute value equation?

-7 > 14

1. x > 5 or x > 9
2. x > -5 or x > -9
3. Empty Set
4. All real numbers
5. What is the solution set for the absolute value equation?

- ≤ -7

1. x ≤-4 or x ≤
2. x ≥ -4 or x ≥
3. x ≤ -4 or x ≥
4. x ≥ -4 or x
5. What is the solution set for the absolute value equation?

4 < -30

1. x > or x > -2
2. or x < 2
3. Empty Set
4. All real numbers
5. What is the value of this expression?

+

1. 14
2. 4
3. -4
4. -14
5. What is the value of this expression?

+

1. -1
2. 1
3. 25
4. -25
5. What is the value of this expression?

-

1. 6
2. -6
3. 18
4. -18
5. What is the value of this expression?

\*

1. 18
2. 7
3. -7
4. -18
5. What is the value of this expression?

\*

1. 22.5
2. -22.5
3. 10
4. -10
5. What is the value x = 3and y =-2?
6. 7
7. -7
8. 8
9. -8
10. What is the value of when x =4?
11. 4
12. 32
13. 16
14. No Solution
15. What is the valuewhen x = -2 and y = -4?
16. -42
17. 28
18. -16
19. No solution
20. What is the value of when x = 3 and y = -2?
21. -22
22. 22
23. -7
24. 7
25. What is the value of when x = 5 and y = -4?
26. 17
27. 21
28. 73
29. 169