***Solution Section* 1.7 – Inequalities**

***Exercise***

Find: 

***Solution***



***Exercise***

Find: 

***Solution***



***Exercise***

Find: 

***Solution***



***Exercise***

Find: 

***Solution***



***Exercise***

Find: 

***Solution***



***Exercise***

Find: 

***Solution***



***Exercise***

Solve 

***Solution***







∴ ***Solution***:  

***Exercise***

Solve 2 – 3*x* ≤ 5

***Solution***

 *Divide by – 3 both sides*



∴ ***Solution***:  *or* [–1, ∞)

***Exercise***

Solve 

***Solution***









∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***



∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***



∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***





∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***





∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***



∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***



∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***



∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***





∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***





∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***:  *or* 

***Exercise***

Solve 

***Solution***

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∴ ***Solution***:  

***Exercise***

Solve 

***Solution***

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∴ ***Solution***:  

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***









∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

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∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

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∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***









∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***











∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***













∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***











∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***











∴ ***Solution***:  *or* 

***Exercise***

Solve the inequality equation 

***Solution***





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***



∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***









∴ ***Solution***: 

***Exercise***

Solve 

***Solution***

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∴ ***Solution***:  

***Exercise***

Solve the inequality equation: 1 ≤ 2*x* + 3 < 11

***Solution***

1 − 3 ≤ 2*x* + 3 − 3 < 11− 3

−2 ≤ 2*x* < 8



∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***



∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***



∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

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∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

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∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***





∴ ***Solution***: 

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Solve the inequality equation 

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∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

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∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

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∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

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∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***





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∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***





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∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***











∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

*Impossible*, since Absolute value can’t be negative.

∴ No ***Solution***

***Exercise***

Solve the inequality equation 

***Solution***

*Impossible*, since Absolute value can’t be negative.

∴ No ***Solution***

***Exercise***

Solve the inequality equation 

***Solution***

∴ ***Solution:*** 

***Exercise***

Solve the inequality equation 

***Solution***

∴ ***Solution:*** 

***Exercise***

Solve the inequality equation 

***Solution***





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***



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∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***





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∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***









∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

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∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***



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∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***



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∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***



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| --- | --- |
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∴ ***Solution***: 

***Exercise***

Solve the inequality equation: 

***Solution***

 *Multiply by 7 both sides*







 

 

 

 

∴ ***Solution***:  

***Exercise***

Solve the inequality equation: 

***Solution***









 

 

 

∴ ***Solution***:  

***Exercise***

Solve the inequality equation: |*x* – 2| < 5

***Solution***

−5 < *x* − 2 < 5

∴ ***Solution***: 

***Exercise***

Solve the inequality equation: 

***Solution***









∴ ***Solution***: 

***Exercise***

Solve the inequality equation: 

***Solution***







∴ ***Solution***:  

***Exercise***

Solve the inequality equation: 

***Solution***



 

 

 

∴ ***Solution***:  

***Exercise***

Solve the inequality equation: 

***Solution***







∴ ***Solution***:  

***Exercise***

Solve the inequality equation: 

***Solution***

 

 

 

∴ ***Solution***:  

***Exercise***

Solve 

***Solution***

∴ ***Solution*** set:  because the absolute value always greater than any negative number.

***Exercise***

Solve 

***Solution***

∴ ***No solution***, because the absolute value cannot be less than any negative number

***Exercise***

Solve the inequality equation 

***Solution***

∴ ***No solution***, because the absolute value cannot be any negative number

***Exercise***

Solve: 

|  |  |  |
| --- | --- | --- |
| 0 2 5 | | |
| **+** | **−** | **+** |

***Solution***







∴ ***Solution***:  

***Exercise***

|  |  |  |
| --- | --- | --- |
| 0 6 | | |
| **+** | **-** | **+** |

Solve: 

***Solution***





∴ ***Solution***:  ******

***Exercise***

Solve the inequality: 

***Solution***





∴ ***Solution***:  

***Exercise***

Solve 

***Solution***



∴ ***Solution***:  ******

***Exercise***

Solve 

***Solution***







∴ No ***Solution***

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***









∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***







∴ ***Solution***: 

***Exercise***

Solve: 

***Solution***

|  |
| --- |
| −∞ −3 3 ∞ |
| − + + |









∴ ***Solution***:  

***Exercise***

Solve 

|  |  |  |  |
| --- | --- | --- | --- |
| −1 0 1 2 | | | |
| − | + | − | + |

***Solution***





∴ ***Solution***:  

***Exercise***



***Solution***





|  |  |  |  |
| --- | --- | --- | --- |
| −3 −1 0 1 | | | |
| **−** | **+** | **−** | **+** |





∴ ***Solution***:  

***Exercise***

Solve 

***Solution***



|  |  |  |  |
| --- | --- | --- | --- |
| 0 **1** | | | |
| **−** | **+** | **−** | **+** |



 



∴ ***Solution***:  

***Exercise***

Solve the inequality equation 

***Solution***



|  |  |  |  |
| --- | --- | --- | --- |
| **0** 1 4 | | | |
| **−** | **+** | **−** | **+** |





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***



|  |  |  |  |
| --- | --- | --- | --- |
| **0** 3 | | | |
| **−** | **+** | **−** | **+** |





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***



|  |  |  |  |
| --- | --- | --- | --- |
| **0** 2 | | | |
| **−** | **+** | **−** | **+** |





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***





|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **0** 2 4 | | | | |
| **+** | **−** | **+** | **−** | **+** |





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **0** 1 3 | | | | |
| **+** | **−** | **+** | **−** | **+** |





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

|  |  |  |
| --- | --- | --- |
| −4 1 | | |
| **+** | **−** | **+** |

*Restriction*: 





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

|  |  |  |
| --- | --- | --- |
| −3 **0** 2 | | |
| **+** | **−** | **+** |

*Restriction*: 





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

*Restriction*: 





|  |  |  |
| --- | --- | --- |
| **0** −8 | | |
| **+** | **−** | **+** |





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

*Restriction*: 

|  |  |
| --- | --- |
| **0** | |
| **+** | **−** |







∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

|  |  |  |
| --- | --- | --- |
| −4 **0** | | |
| **+** | **−** | **+** |

*Restriction*: 









∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

*Restriction*: 

|  |  |  |
| --- | --- | --- |
| **0** | | |
| **+** | **−** | **+** |









∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

*Restriction*: 

|  |  |  |
| --- | --- | --- |
| **0** | | |
| **+** | **−** | **+** |







∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

*Restriction*: 

|  |  |  |
| --- | --- | --- |
| **0** 2 9 | | |
| **−** | **+** | **−** |







∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

|  |  |  |
| --- | --- | --- |
| 0 3 | | |
| **+** | **−** | **+** |

*Restriction*: 





∴ ***Solution***:  

***Exercise***

Solve the inequality equation 

***Solution***

|  |  |  |
| --- | --- | --- |
| −2 **0** 3 | | |
| **+** | **−** | **+** |

*Restriction*: 





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

*Restriction*: 

|  |  |  |
| --- | --- | --- |
| −6 −2 | | |
| **−** | **+** | **−** |









∴ ***Solution***:  

***Exercise***

Solve the inequality equation 

***Solution***

*Restriction*: 





|  |  |  |
| --- | --- | --- |
| **0** 2 6 | | |
| **−** | **+** | **−** |



∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

|  |  |  |
| --- | --- | --- |
| 0 | | |
| **−** | **+** | **−** |

*Restriction*: 









∴ ***Solution***:  

***Exercise***

Solve the inequality 

***Solution***

***Restriction***: 



|  |  |
| --- | --- |
| **0** 14 | |
| − | + |



 No Solution

∴ ***Solution***:  

***Exercise***

Solve: 

***Solution***

*Conditions*: *x* + 4 ≠ 0 → *x* ≠ −4 *and* *x* −5 ≠ 0 → *x* ≠ 5

 







|  |  |  |  |
| --- | --- | --- | --- |
| −4 0 1/2 5 | | | |
| **+** | **−** | **+** | **−** |









∴ ***Solution***:  

***Exercise***

Solve: 

***Solution***

*Conditions*: *x* ≠ −3 and *x* ≠ 1

 

|  |  |  |  |
| --- | --- | --- | --- |
| −3 0  1 | | | |
| **+** | **−** | **+** | **−** |













∴ ***Solution***:  

***Exercise***

Solve: 

***Solution***

*Conditions*: *x* ≠ −3 and 









|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| −3   **0** | | | | |
| + | − | + | − | + |







∴ ***Solution***: 



***Exercise***

Solve the inequality equation 

***Solution***

***Restriction***: 

|  |  |  |  |
| --- | --- | --- | --- |
| −1 0 2 4 | | | |
| **−** | **+** | **−** | **+** |





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

***Restriction***: 

|  |  |  |  |
| --- | --- | --- | --- |
| −5 0 1 4 | | | |
| **−** | **+** | **−** | **+** |





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

***Restriction***: 



|  |  |  |  |
| --- | --- | --- | --- |
| 0 1 | | | |
| **−** | **+** | **−** | **+** |





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

***Restriction***: 



|  |  |  |  |
| --- | --- | --- | --- |
| 0 1 2 | | | |
| **−** | **+** | **−** | **+** |





∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

***Restriction***: 





|  |  |  |
| --- | --- | --- |
| **0** 3 5 | | |
| **−** | **−** | **+** |



∴ ***Solution***: 

***Exercise***

Solve the inequality equation 

***Solution***

***Restriction***: 

|  |  |  |
| --- | --- | --- |
| −5 −1 **0** | | |
| **−** | **−** | **+** |







∴ ***Solution***: 