**Notes:**

|  |  |
| --- | --- |
| Anti reflexive Property | For all real numbers z, |
| Anti Symmetry Property | For all real numbers x and y,   * If * If |
| Transitive Property | For all real numbers x, y and z   * If * If |
| Addition Property | For all real numbers x,y and z,   * If 𝑥<𝑦 𝑡ℎ𝑒𝑛   𝑥+𝑧<𝑦+𝑧 |
| Subtraction Property | For all real numbers x,y and z,   * If 𝑥<𝑦 ,𝑡ℎ𝑒𝑛 𝑥−𝑧<𝑦−𝑧 |
| Multiplication Property | For all real numbers x, y and z,   * If 𝑥<𝑦 𝑡ℎ𝑒𝑛   𝑥𝑧<𝑦𝑧 𝑖𝑓 𝑧 >0  𝑥𝑧>𝑦𝑧 𝑖𝑓 𝑧 <0  𝑥𝑧=𝑦𝑧,  𝑖𝑓 𝑧=0   * If 𝑥>𝑦 𝑡ℎ𝑒𝑛   𝑥𝑧>𝑦𝑧 𝑖𝑓 𝑧 >0  𝑥𝑧<𝑦𝑧 𝑖𝑓 𝑧 <0  𝑥𝑧=𝑦𝑧,  𝑖𝑓 𝑧=0 |

**Questions:**

* 1. Solve the following equation for x

2x + 6 ≥ 3x + 9

6 – 9 ≥ 3x – 2x

x 3

* 1. Solve the following equation for x

4(–3x + 6) 2(–4x – 10)

–12x + 24 –8x – 20

–12x + 8x –20 – 24

–4x –44

* 1. Solve the following equation for x

–x + 4 6 10

–x + 4 60

–x 60 – 4

–x 56  
x < –56

* 1. Solve the compound inequality

2*x* + 3 < 7 or 5x + 5 > 25

Solve the first inequality

2x + 3 < 7

2x < 4

x < 2

Solve the second inequality

5x + 5 > 25

5x > 20

x > 4

The solution is ***x* < 2** **or** x **> 4.**

Interval notation: **http://www.regentsprep.org/regents/math/algebra/AE8/Linequ9.gif**