properties of linear systems

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| Graphically solve the following three systems of linear equations. Include a sketch of each system along with window settings. |

1. $-2x+y=2$

$$2x+y=2$$

1. $-2x+y=2$

$$-2x+y=4$$

1. $-2x+y=2$

$$-4x+2y=4$$

* How many solutions does each system have?

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| In any system of linear equations there are 3 possible types of solutions.1. **INTERSECTING LINES** **(one solution)**

 \*different slopes1. **PARALLEL LINES (no solutions)**

 \*same slopes with different  y-intercepts1. **COINCIDENT LINES** **(infinite solutions)**

 \*same slopes and same  y-intercepts |

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| Without graphing, determine the *number* of solutions for each linear system below. |

1. $x+y=3$

$$-2x-y=-2$$

1. $4x+6y=-10$

$$-2x-3y=5$$

1. $2x-4y=-1$

$$3x-6y=2$$

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| Given the equation $$-6x+y=3$$write another linear equation that will form a linear system with: |

1. Exactly one solution.
2. No solution.
3. Infinite solutions.