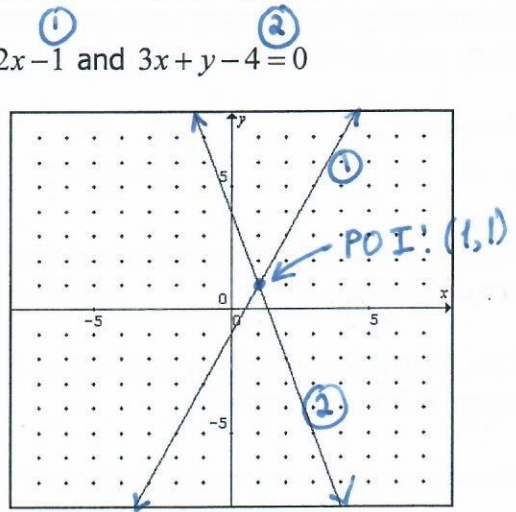


Determining Points of Intersection Graphically

Date: _____

The following graph shows the intersection of the lines $y = 2x - 1$ and $3x + y - 4 = 0$

- a) Label each line with its equation.
- b) What are the coordinates of the point of intersection? (1, 1)
- c) How could you check that your answer for the point of intersection is correct?



①

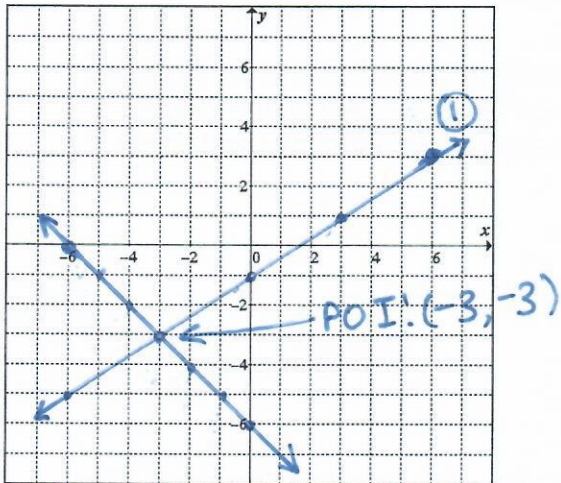
| LS | RH |
|----|----------|
| y | 2x - 1 |
| 1 | 2(1) - 1 |
| 1 | 2 - 1 |
| 1 | 1 ✓ |

②

| LS | RS |
|--------------|-----|
| 3x + y - 4 | 0 |
| 3(1) + 1 - 4 | 0 |
| 4 - 4 | 0 |
| 0 | 0 ✓ |

1. Use the slope-intercept method to sketch the following pairs of lines on the same axes. Determine the point of intersection and **show a check** of your answer.

a) $y = \frac{2}{3}x - 1$ and $y = -x - 6$



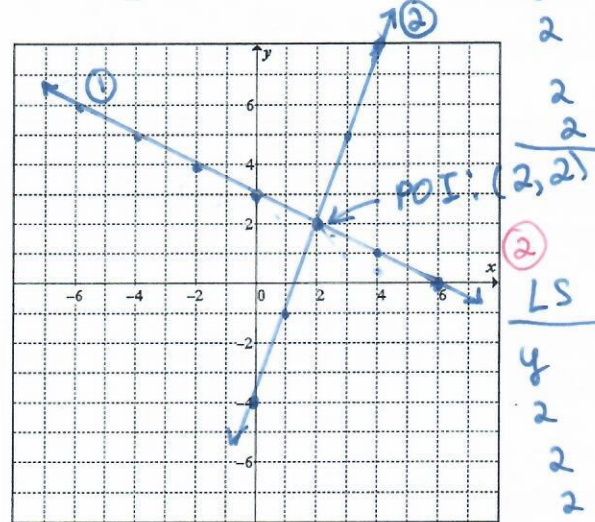
①

| LS | RS |
|----|-----------------------|
| y | $\frac{2}{3}x - 1$ |
| -3 | $\frac{2}{3}(-3) - 1$ |
| -3 | -2 - 1 ✓ |

②

| LS | RS |
|----|-----------|
| y | -x - 6 |
| -3 | -(-3) - 6 |
| -3 | 3 - 6 |

b) $y = -\frac{1}{2}x + 3$ and $y = 3x - 4$



①

| LS | RS |
|----|-----------------------|
| y | $-\frac{1}{2}x + 3$ |
| 2 | $-\frac{1}{2}(2) + 3$ |
| 2 | -1 + 3 |
| 2 | 2 ✓ |

②

| LS | RS |
|----|----------|
| y | 3x - 4 |
| 2 | 3(2) - 4 |
| 2 | 6 - 4 |
| 2 | 2 |

lattice points
 points with integer coordinates.

2. What are some possible advantages and disadvantages to determining a point of intersection using a graphing method?

| Advantages | Disadvantages |
|------------------------|---|
| Visualize the solution | if POI is not a lattice point, we have to approximate |
| Easy to do. | |