

White Dot when

$$y = 2x - 3 \quad \text{and} \quad x(y + 1) = 4$$

$$x(2x - 3 + 1) = 4$$

$$x(2x - 2) = 4$$

$$2x^2 - 2x = 4$$

$$x^2 - x - 2 = 0$$

$$x = 2$$

(2, 1) is the white dot

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To find Black dot

$$y = 2x - 3$$

$$x^2 - 6x + y^2 = 0$$

$$x^2 - 6x + (2x - 3)^2 = 4$$

$$x^2 - 6x + 4x^2 - 9 = 4$$

$$5x^2 - 6x - 5 = 0$$

$$x = 2.32$$

$$y = 1.64$$

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The Grey line

If the grey line is parallel to the black line but above it then it will cut only the white line.
so $y = 2x - 1$ could be an equation for the grey line.

This will cut $x(y + 1) = 4$ when

$$x(2x - 1 + 1) = 4$$

$$2x^2 = 4$$

$$x = 1.41$$

$$y = 2 \times 1.41 - 3 = -0.18$$

Grey dot is at (1.41, -0.18)

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