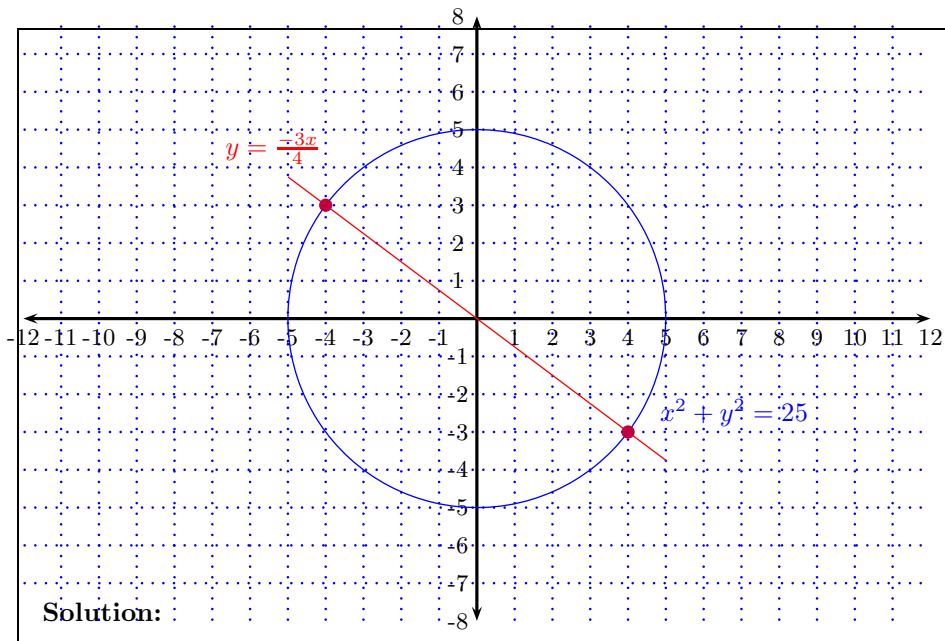


1. Approximate the real solution/s to the system of equations

$$x^2 + y^2 = 25$$

$$4y + 3x = 0$$



By inspecting the graph, on the real plane, we see there are two real solutions to the system. From the graph we can get an approximation for the solution points. These are, approximately,

$$(-4, 3)$$

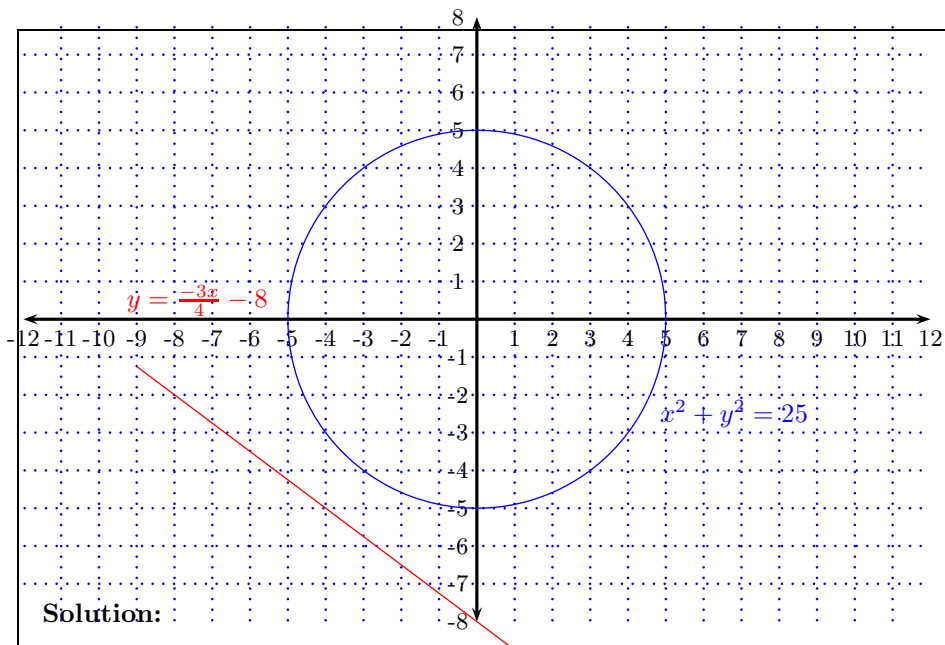
and

$$(4, -3)$$

2. Approximate the real solution/s to the system of equations

$$x^2 + y^2 = 25$$

$$4y + 3x = -32$$

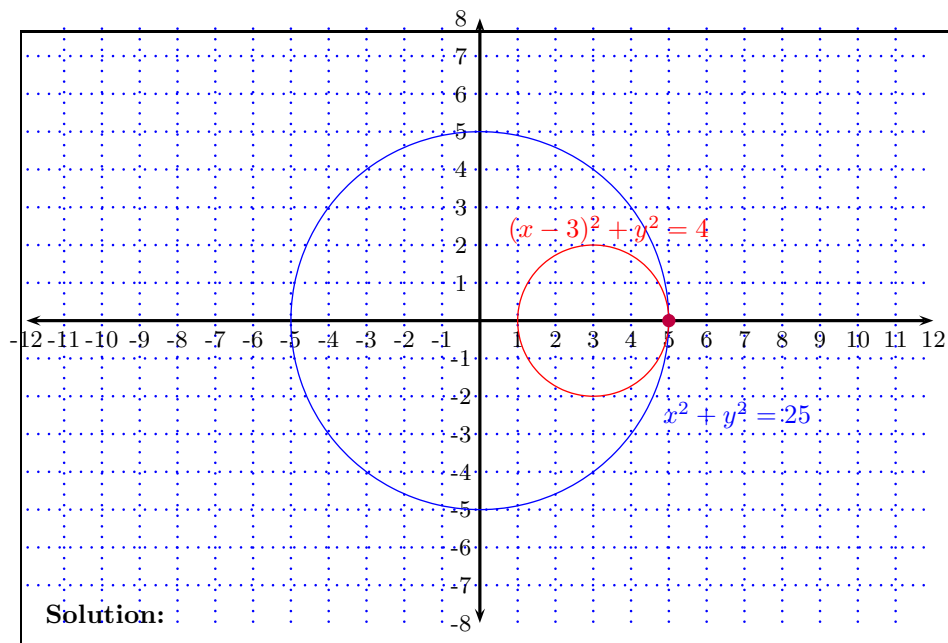


By inspecting the graph, on the real plane, we see there are NO REAL solution to the system.

3. Approximate the real solution/s to the system of equations (bonus: find all real or non-real solutions to this)

$$x^2 + y^2 = 25$$

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



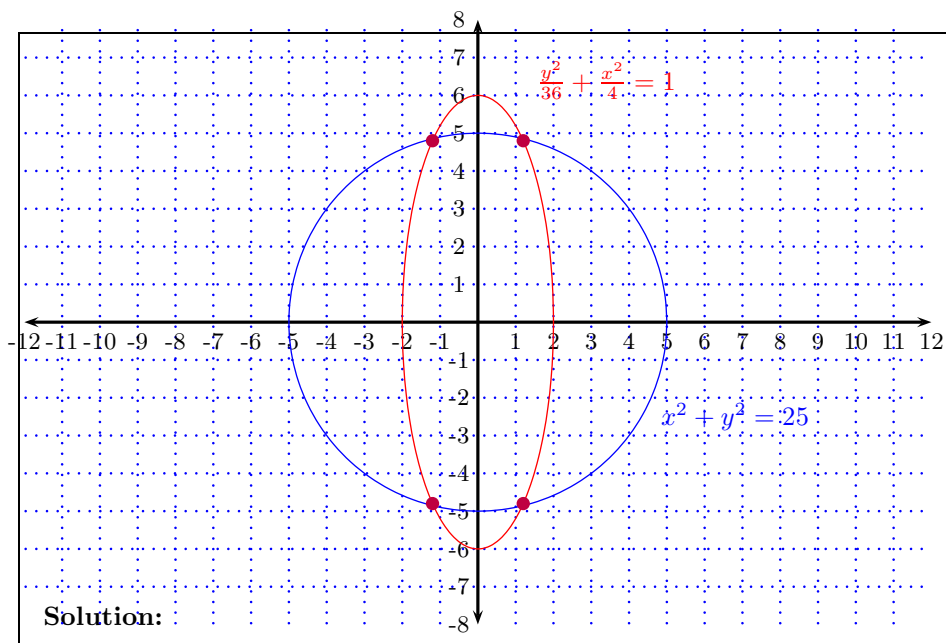
By inspecting the graph, on the real plane, we see there is one real solution to the system, the real solutions is approximately

$$(5, 0)$$

4. Approximate the solution/s to the real system of equations

$$x^2 + y^2 = 25$$

$$\frac{y^2}{36} + \frac{x^2}{4} = 1$$



By inspecting the graph, on the real plane, we see there are four real solutions to the system, the real solutions are approximately

$$(1.2, 4.8), \quad (1.2, -4.8)$$

and

$$(-1.2, 4.8), \quad (-1.2, -4.8)$$

5. Approximate the real solution/s to the system of equations

$$x + y = 8$$

$$-2y = 2x - 16$$

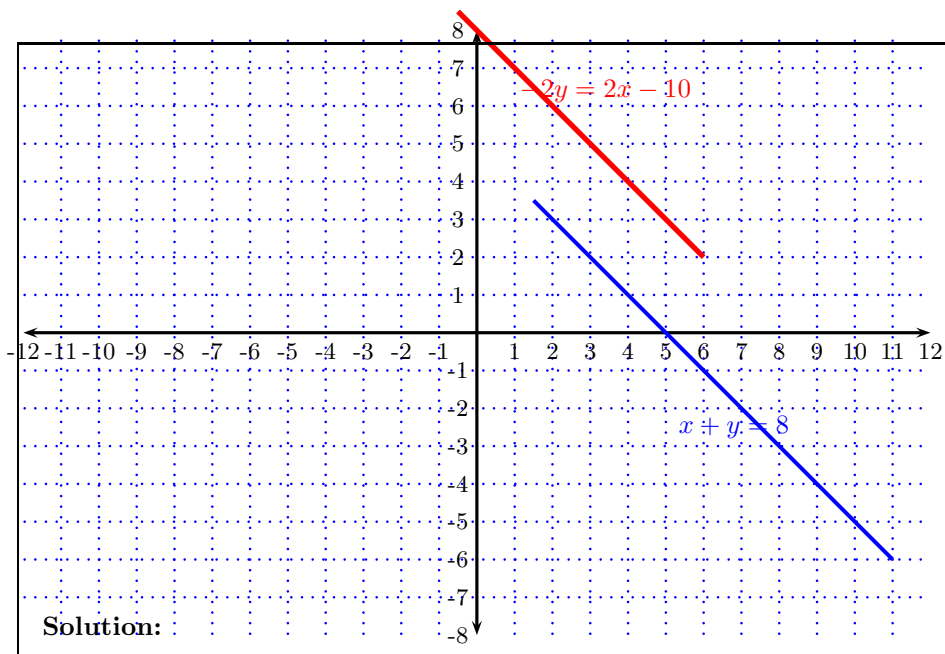


By inspecting the graph, on the real plane, we see there are infinite real solutions to the system, the real solutions are all point that lie on either line, since the two lines contain exactly the same points.

6. Approximate the real solution/s to the system of equations

$$x + y = 8$$

$$-2y = 2x - 10$$

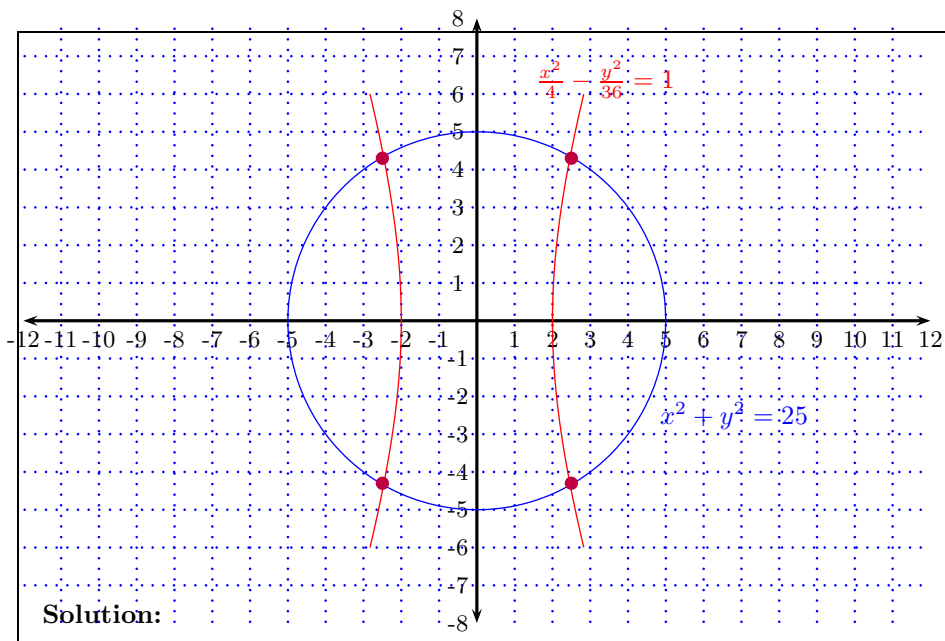


By inspecting the graph, on the real plane, we see there are NO real solutions to the system.

7. Approximate the solution/s to the real system of equations

$$x^2 + y^2 = 25$$

$$\frac{x^2}{4} - \frac{y^2}{36} = 1$$



By inspecting the graph, on the real plane, we see there are four real solutions to the system, the real solutions are approximately

(2.5, 4.3), (-2.5, 4.3)

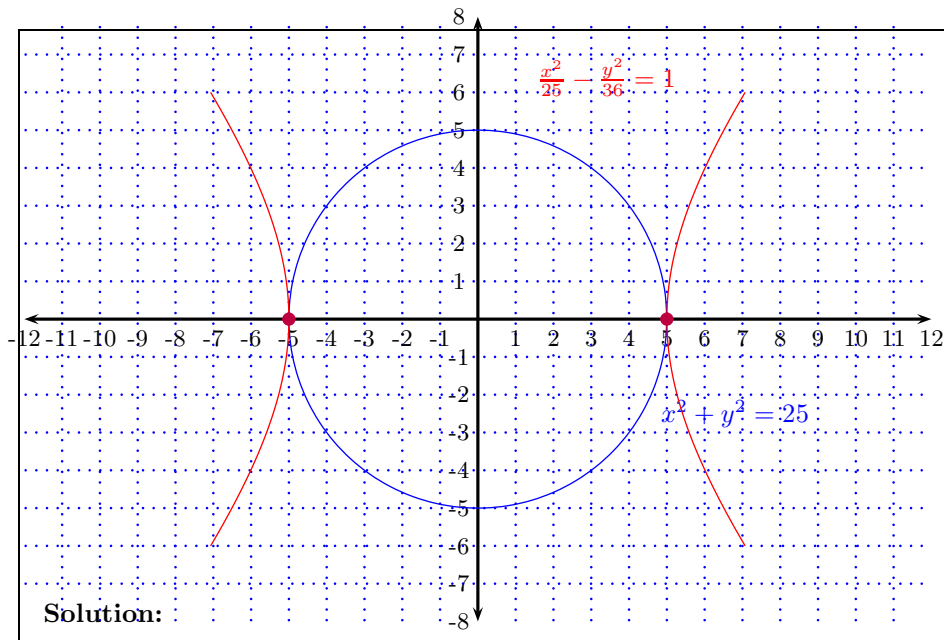
and

(-2.5, -4.3), (2.5, -4.3)

8. Approximate the solution/s to the real system of equations

$$x^2 + y^2 = 25$$

$$\frac{x^2}{25} - \frac{y^2}{36} = 1$$



Solution:

By inspecting the graph, on the real plane, we see there are two real solutions to the system, the real solutions are approximately

($\pm 5, 0$)