

Question1

Given the two points $P_1(-1, -2)$ and $P_2(7, -2)$.

- a) Find the distance between the points P_1 and P_2
- b) Find the mid point of the line segment joining the points P_1 and P_2
- c) If P_1 and P_2 are endpoints of a diameter in a circle, then find an equation of this circle. Write the answer in the standard form.

Question2

Given the equation $|x - y| = 1$.

- a) Find the x - and y -intercepts of the graph of this equation.
- b) Sketch the graph of this equation by plotting additional points.

Question3

Given the equation of a circle $2x^2 + 2y^2 + 8x - 20y + 40 = 0$

- a) Write this equation in the standard form.
- b) Find the center and the radius of this circle

Question4

Find an equation of a circle that is tangent to both axes, has its center in the second quadrant, and has a diameter of 4.