In Problems 1 to 4, draw the phase-plane and classify the origin as sink, source, saddle, center, stable or unstable spiral

Problem 1 (5 points):

$$x_1' = 6x_1 - x_2$$

$$x_2' = x_1 + 4x_2$$

Problem 2 (5 points):

$$x_1' = 2x_1 + x_2$$

$$x_2' = x_1 + 2x_2$$

Problem 3 (5 points):

$$x_1' = x_2$$

$$x_2' = -x_1$$

Problem 4 (5 points):

Problem 4   (5 points):

$$x_1' = 6x_1 - x_2$$
$$x_2' = 5x_1 + 4x_2$$