

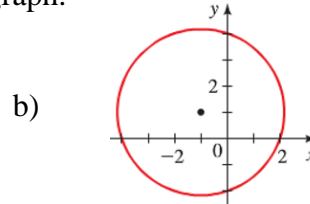
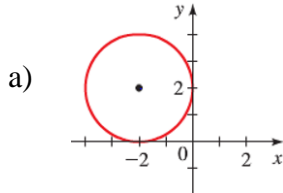
2.1 In-class Practice

1. Find the midpoint and the length of segment PQ , if

a) $P(-6, -5), Q(6, 10)$

b) $P(3\sqrt{2}, 4\sqrt{5}), Q(\sqrt{2}, -\sqrt{5})$

2. Find the equation of the circle given by the graph.



3. Find the centre and the radius of the circle. Then graph it.

a) $(x - 3)^2 + y^2 = 9$

b) $(x + 3)^2 + (y - 4)^2 = 16$

c) centre $(-1, 5)$; passes through $(-4, -6)$

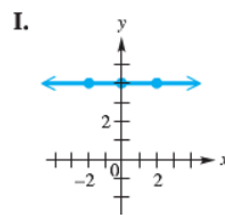
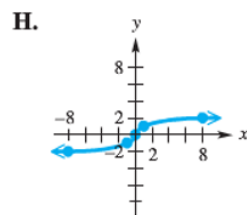
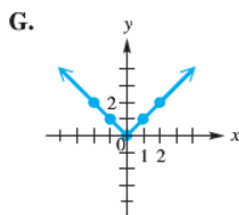
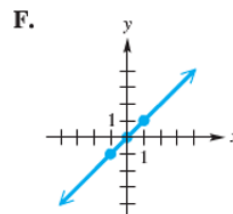
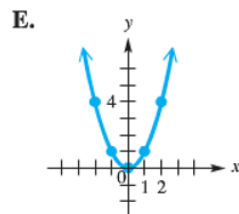
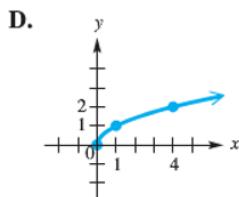
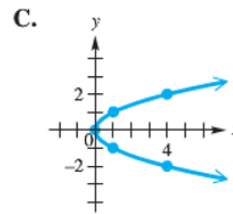
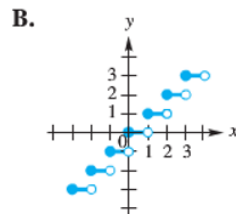
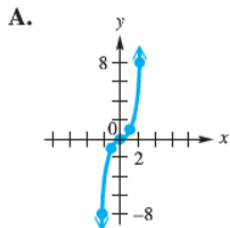
d) with a diameter PQ , where $P(-1, 1), Q(5, 9)$

4. Sketch the graph of the equation.

a) $x^2 + y^2 + 4x - 10y = 21$

b) $x^2 + y^2 + 6x - 12y + 45 = 0$

5. Describe the main properties (domain, range, increasing/decreasing, equation/name) of the following graphs:



6. Graph the equation $4x^2 + 2y^2 = 1$ by solving for y and graphing two equations corresponding to the negative and positive square roots. (This graph is called an *ellipse*.)