PreCalc
10.1c Wkst

Name:_____

For the following exercises, graph the given ellipses, noting center, vertices, and foci.

40. $x^2 - 8x + 25y^2 - 100y + 91 = 0$

41. $x^2 + 8x + 4y^2 - 40y + 112 = 0$

42. $64x^2 + 128x + 9y^2 - 72y - 368 = 0$

43. $16x^2 + 64x + 4y^2 - 8y + 4 = 0$

62. Find the equation of the ellipse that will just fit inside a box that is 8 units wide and 4 units high.

63. Find the equation of the ellipse that will just fit inside a box that is four times as wide as it is high. Express in terms of h, the height.

64. An arch has the shape of a semi-ellipse (the top half of an ellipse). The arch has a height of 8 feet and a span of 20 feet. Find an equation for the ellipse, and use that to find the height to the nearest 0.01 foot of the arch at a distance of 4 feet from the center.

65. An arch has the shape of a semi-ellipse. The arch has a height of 12 feet and a span of 40 feet. Find an equation for the ellipse, and use that to find the distance from the center to a point at which the height is 6 feet. Round to the nearest hundredth.