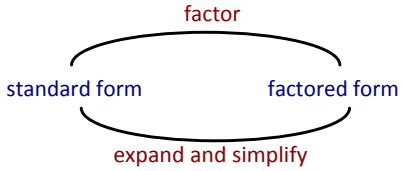
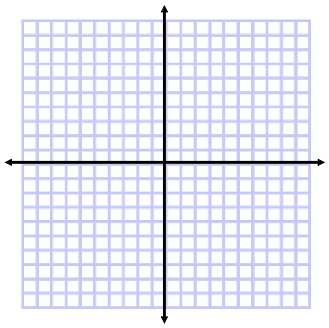
5.4 Graphing Quadratics From Factored Form

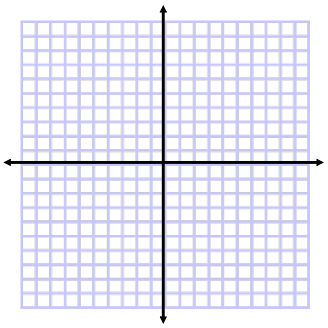


Ex. 1 Determine the x-intercepts and vertex, then graph.

a) $y = x^2 - 8x + 12$

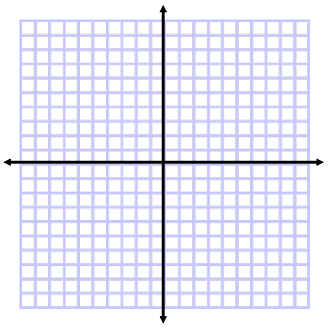
b) $y = 9 - x^2$

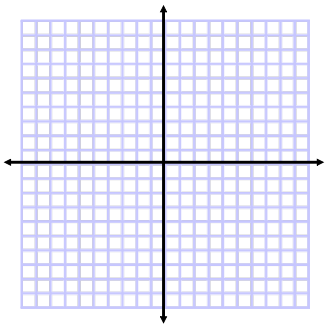




c) $y = -x^2 + 3x$

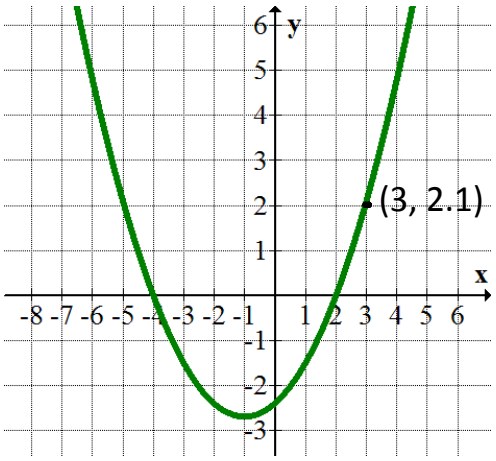
d) $y = x^2 - 6x + 9$



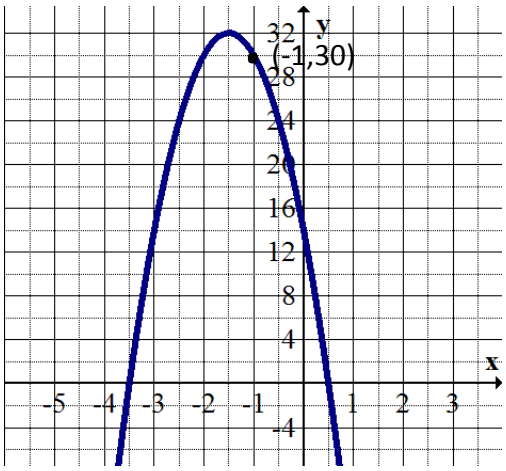


Ex. 2 Write an equation in the form $y = ax^2 + bx + c$ for each graph, by first finding the equation in another form.

a)



b)

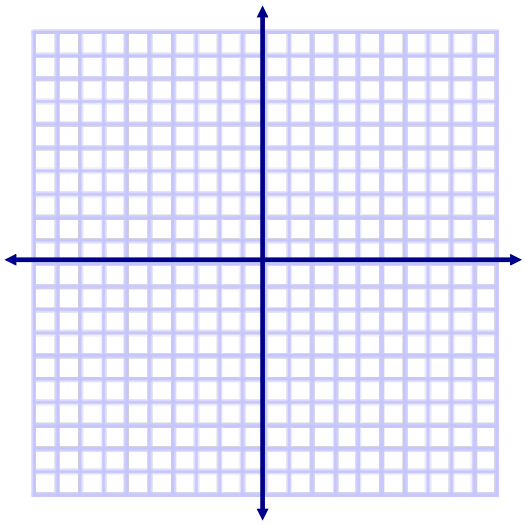


Ex. 3 The paved surface of a road has a parabolic cross section given by:

$$d = \frac{-1}{125}w^2 + \frac{2}{25}w$$

where d is the depth, in metres and w is the width , in metres from the curb.

a) Sketch a graph of the relation.



b) For what values of w is this relation valid?

c) How wide is the road?

d) How high is the road?