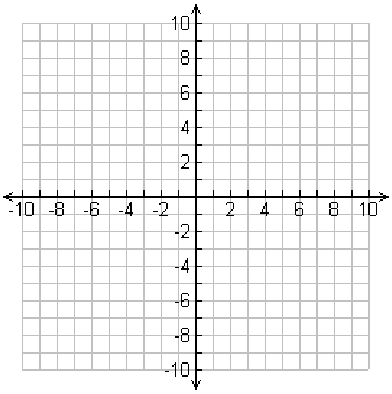
Name: ___________________________________ Points: ______

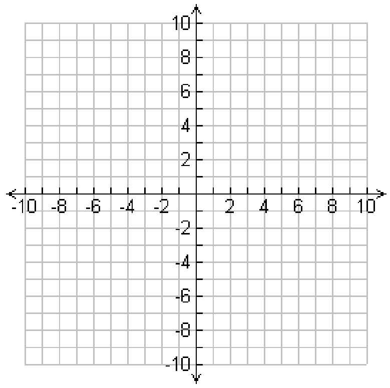
1. For each function:
   i) Identify the vertex.
   ii) Sketch the graph.
   iii) Identify the axis of symmetry.
   iv) Identify the maximum or minimum value of the function.

a. $f(x) = x^2 - 3$



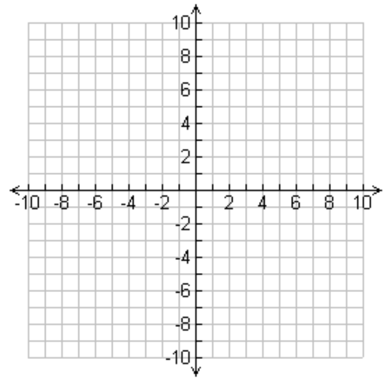
The vertex is __________ .
The axis of symmetry is _________ .
The max/min value is __________ .

b. $f(x) = (x-3)^2$



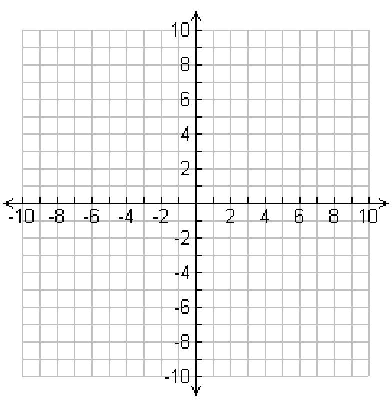
The vertex is __________ .
The axis of symmetry is _________ .
The max/min value is __________ .

c. $f(x) = -x^2 - 3$



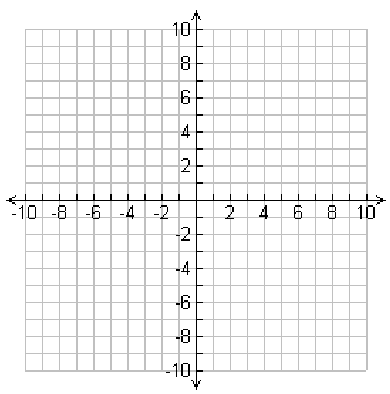
The vertex is __________ .
The axis of symmetry is _________.
The max/min value is __________ .

d. $f(x) = -(x-3)^2$



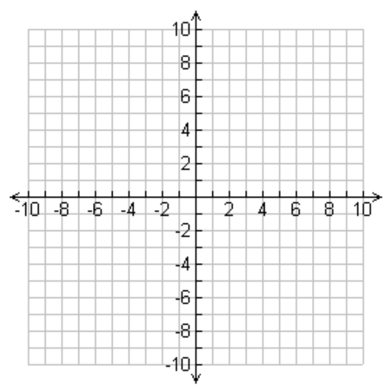
The vertex is __________ .
The axis of symmetry is _________ .
The max/min value is __________ .

e. $f(x) = \frac{1}{2}(x-3)^2$



The vertex is __________ .
The axis of symmetry is _________ .
The max/min value is __________ .

f. $f(x) = 2(x-3)^2$



The vertex is __________ .
The axis of symmetry is _________.
The max/min value is __________ .

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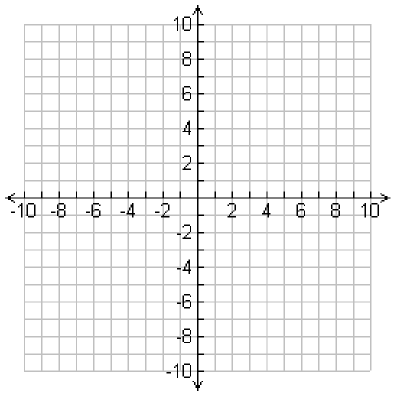
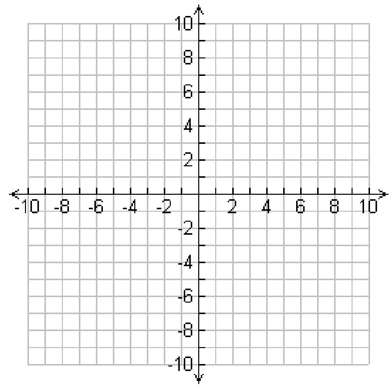
g. $f(x)=(x+2)^2-4$



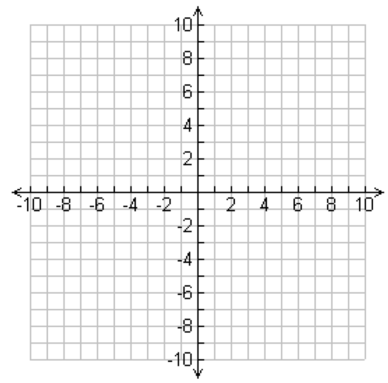
The vertex is ___________ .
The axis of symmetry is __________ .
The max/min value is ___________ .

h. $f(x)=(x-3)^2-1$



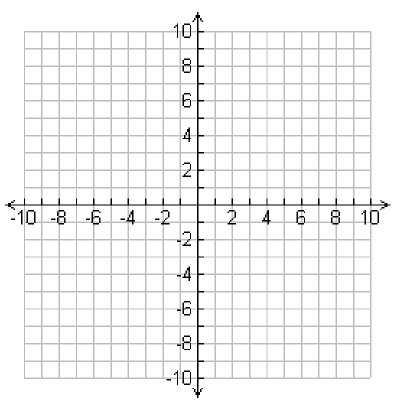
The vertex is ___________ .
The axis of symmetry is __________ .
The max/min value is ___________ .

i. $f(x)=-(x+6)^2+9$



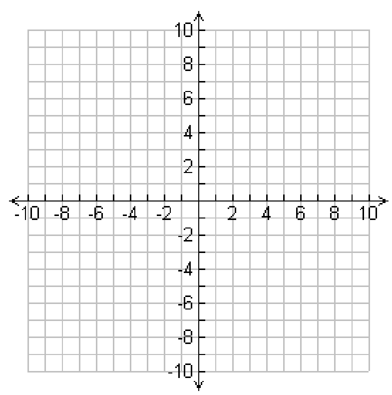
The vertex is ___________ .
The axis of symmetry is __________.
The max/min value is ___________ .

j. $f(x)=-(x-1)^2+7$



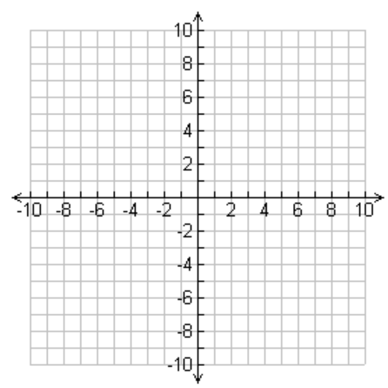
The vertex is ___________ .
The axis of symmetry is __________ .
The max/min value is ___________ .

k. $f(x)=\frac{1}{4}(x-5)^2+4$



The vertex is ___________ .
The axis of symmetry is __________ .
The max/min value is ___________ .

l. $f(x)=3(x-4)^2-4$



The vertex is ___________ .
The axis of symmetry is __________.
The max/min value is ___________ .

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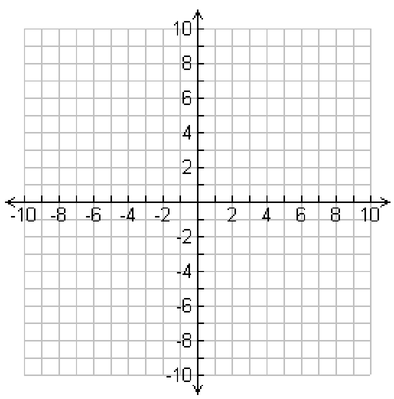
2. Find the vertex by using the vertex formula.

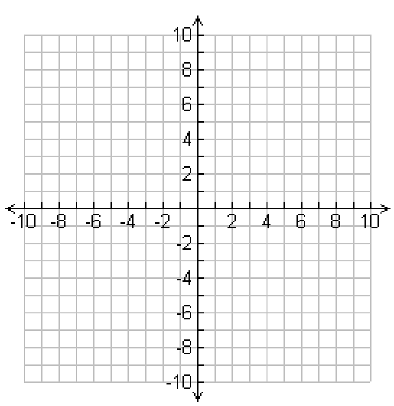
a. $h(x) = x^2 + 6x - 7$

The vertex is ___________ .
The axis of symmetry is __________ .
The max/min value is ___________ .
The x-intercept(s) is, if they exist, ____________________ .
The y-intercept is _____________ .



b. $k(x) = 2x^2 + 8x + 9$

The vertex is ___________ .
The axis of symmetry is __________ .
The max/min value is ___________ .
The x-intercept(s) is, if they exist, ____________________ .
The y-intercept is _____________ .



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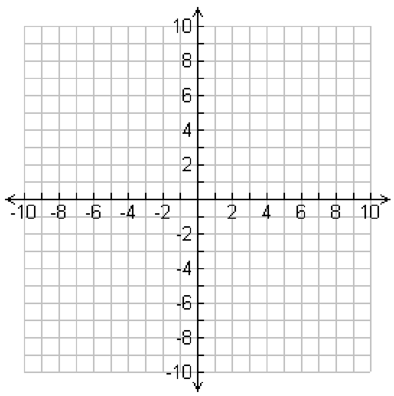
c. $p(x) = -x^2 + 5x - \dfrac{25}{4}$

The vertex is __________ .
The axis of symmetry is _________ .
The max/min value is __________ .
The x-intercept(s) is, if they exist, __________________ .
The y-intercept is ____________ .



Although the Egyptians knew how to calculate the areas of building of various shapes, they were unable to calculate the length of sides or walls for the floor plans. Instead of creating or developing a method in which to calculate the wall dimensions, they developed another method of finding the dimensions by creating a lookup table of standard sizes. This table is similar to that of multiplication tables. Engineers would find the most fitting design based on the table developed. Unfortunately due to incoherent reproduction of the tables, there were instances of errors. Hence this method proved inefficient. (Hell, 2004).

Reference

Hell, D. (2004). *History behind Quadratic Equations*. Retrieved on June 22,2011. www.bx.co.uk/dna/h2g2/A2982567 created October 13,2004

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