

Name _____

Date _____

Advanced Algebra

Quadratic Graphs and equations

1) For all problems, sketch a picture and find the equation in the form $y = ax^2 + bx + c$, the quadratic function whose graph :

a) cuts the x- axis at 5 and 1, and passes through (2,-9)

b) cuts the x- axis at 2 and $\frac{-1}{2}$ and passes through (3,-14)

c) touches the x-axis at 3, and passes through (-2,-25)

d) touches the x- axis at -2, and passes through (-1,4)

e) cuts the x- axis at 3, passes through (5,12) and has axis of symmetry $x = 2$

f) cuts the x-axis at 5, passes through (2,5), and has axis of symmetry $x = 1$

2) The quadratic function $f(x) = ax^2 + bx + c$ has y intercept -2 and axis of symmetry $x = 3$. The graph also passes through (5,3).

a) State the value of c.

b) Use the remaining information to write two equations in terms of a and b.

c) Solve these equations simultaneously, and hence state the equation of the quadratic.

d) Graph the quadratic using technology.