

Algebra 2 - Forms of Quadratic Functions - Test

Common Core A-SSE.B.3a, A-SSE.B.3b, F-IF.C.8a · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

This 45-minute test on the forms of quadratic functions has 9 questions worth 20 points in total. The questions move from direct skills to multi-step problems. Show your work, because partial credit is given for a correct setup and sound reasoning.

About this test

- Grade: Algebra 2
- Chapter: Forms of Quadratic Functions
- Standards: A-SSE.B.3a, A-SSE.B.3b, F-IF.C.8a
- Time: 45 minutes
- Total: 20 points

Question 1 - Zeros from factored form [2 pts]

Find the zeros and the axis of symmetry of $f(x) = (x+6)(x-2)$.

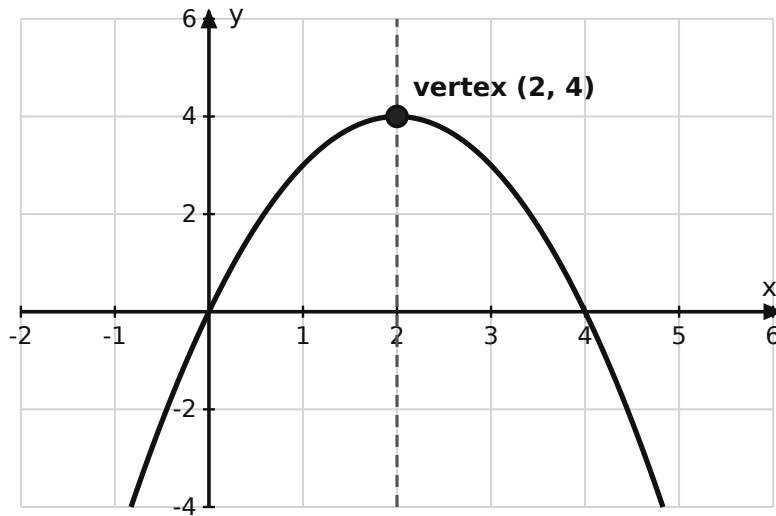
Question 2 - Complete the square [3 pts]

Write $f(x) = x^2 + 6x + 1$ in vertex form and give the vertex.

Question 3 - Vertex from standard form [2 pts]

Find the vertex of $g(x) = 3x^2 - 12x + 7$ and state whether it is a maximum or minimum.

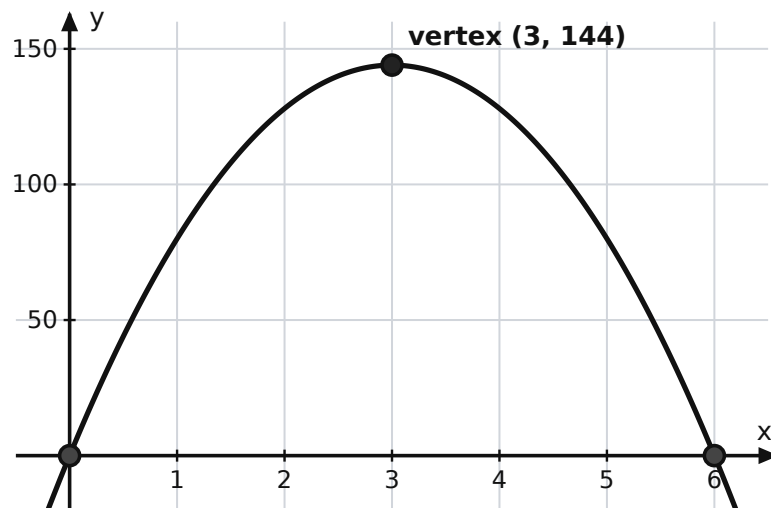
Question 4 - Equation from a graph [2 pts]



Vertex (2, 4); the curve passes through (0, 0).

The parabola has vertex (2, 4) and passes through the origin. Write its equation in vertex form.

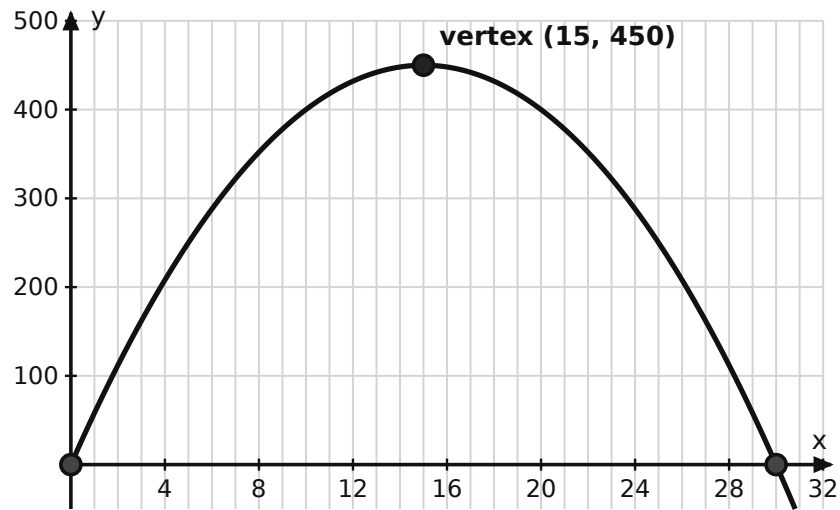
Question 5 - Projectile [2 pts]



Rocket height $h(t)$.

A rocket's height is $h(t) = -16t^2 + 96t$ feet. Find the maximum height and the time it occurs.

Question 6 - Revenue [2 pts]



$$R(p) = -2p(p - 30).$$

The revenue from a school fundraiser is $R(p) = -2p^2 + 60p$ dollars at price p . Write R in factored form and find the price that gives the maximum revenue.

Question 7 - Choose the form [2 pts]

For $f(x) = x^2 - 6x + 8$, find (a) the zeros by factoring and (b) the vertex.

Question 8 - Complete the square, $a = 2$ [3 pts]

Write $f(x) = 2x^2 - 8x + 3$ in vertex form.

Question 9 - Find the error [2 pts]

Noah wrote that the vertex of $f(x) = (x+3)^2 - 1$ is $(3, -1)$. Explain his error and give the correct vertex.