

1. Let $f(x) = 3x^2 + 12x + 3$.

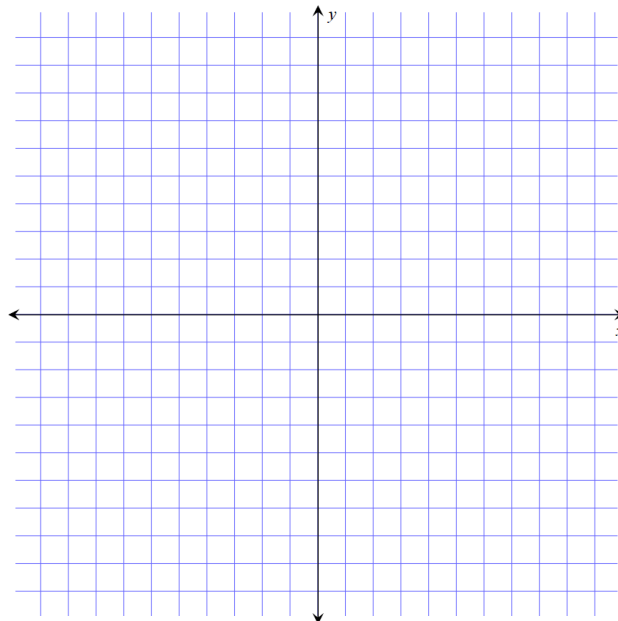
(a) Rewrite this quadratic function in standard form by completing the square.

(b) Find the vertex.

(c) Find all intercepts.

(d) Find the maximum or minimum value of the function.

(e) Sketch its graph labeling the vertex and intercepts.



1. Let $f(x) = -x^2 + 2x + 15$.

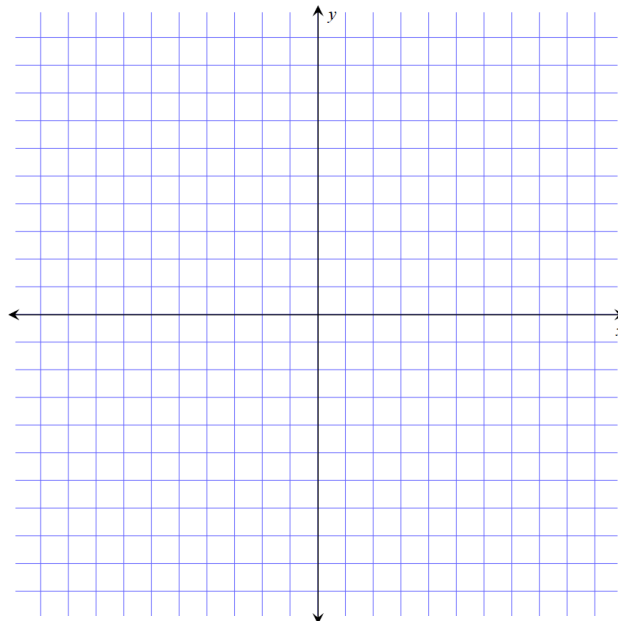
(a) Rewrite this quadratic function in standard form by completing the square.

(b) Find the vertex.

(c) Find all intercepts.

(d) Find the maximum or minimum value of the function.

(e) Sketch its graph labeling the vertex and intercepts.



1. Let $f(x) = -2x^2 - 4x + 18$.

(a) Rewrite this quadratic function in standard form by completing the square.

(b) Find the vertex.

(c) Find all intercepts.

(d) Find the maximum or minimum value of the function.

(e) Sketch its graph labeling the vertex and intercepts.

