

YOUR NAME: _____

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Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to **show neatly all your work**. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Graph $f(x) = -x^2 - 4x + 5$ **manually** by following the steps:

(a) Find the vertex:

(e) Sketch the graph:

(b) Opening direction:

(c) y -intercept:

(d) x -intercepts:

2. A ball is thrown upward at an initial speed of 96 ft/sec from a top of a building 100 ft high. The height of the ball t seconds into its orbit is given by $h(t) = 100 + 96t - 16t^2$ feet.

(a) When will the ball reach its maximum height?

(b) Find the maximum height the ball will reach.

(c) When will the ball hit the ground?