

## Quiz 8

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Find the vertex and sketch the graph of the parabola given by the function

$$f(x) = x^2 - 14x + 50.$$

Solution: Add and subtract 49 to  $f(x)$  to get  $f(x) = x^2 - 14x + 49 - 49 + 50 = (x - 7)^2 + 1$ , so the vertex is the point  $(7, 1)$ . Using the translation ideas of chapter 3, the graph of  $f(x)$  is just the graph of  $y = x^2$  translated 7 units to the right and one unit upwards.