

1. Let  $f(x) = (x - 2)^3(3x + 4)^4$ . Use the methods of Section 3.1 to find all the critical numbers of  $f$  and classify each critical point as a relative maximum, a relative minimum, or neither.

2. Suppose  $g$  is a function whose derivative is given by  $g'(x) = \frac{x + 7}{(x - 2)(x - 9)}$ . Find all the critical numbers of  $g$  and then for each critical number determine if it corresponds to a relative maximum, to a relative minimum, or neither.