Quiz 9 Key — MA16010 — October 25, 2017
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Min	Mean	Max
0	3.6	5

1. Let $g(x) = \dfrac{x^3 + 11x^2 + 14x - 33}{x + 9}$.

   (a) Perform long division on $g(x)$. Write your answer as
   $$g(x) = \text{quotient} + \frac{\text{remainder}}{\text{divisor}}.$$

   (b) List all the vertical, horizontal, and/or slant asymptotes of $g(x)$.

(a) (1 point) $g(x) = x^2 + 2x - 4 + \dfrac{3}{x + 9}$

(b) (2 points) Vertical asymptote at $x = -9$

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2. A graph of $f'(x)$ is given below.

   (a) Find the x-coordinate of the local maximum of $f(x)$.

   (b) Find the interval on which $f(x)$ is concave up.

(a) (1 point) $x = 4$ (b) (1 point) $(-\infty, 2)$