

**Quiz 5 Key — MA161 — September 12, 2018**

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Min	Mean	Max
5	17	20

1. For this problem,  $f(x) = \frac{3x^2 + x - 1}{x^2 + x - 6}$ .

(a) (4 points) How many vertical asymptotes does  $f(x)$  have?

(b) (4 points) How many horizontal asymptotes does  $f(x)$  have?

(a) 2

(b) 1

NOTE: this problem appeared on the first midterm exam in the fall of 2015.

2. (12 points) Evaluate the limit, if it exists.

$$\lim_{x \rightarrow \infty} \sqrt{4x^2 + 3x} - 2x$$

3/4