

Spring 2012 Math 151

Week in Review # 3

sections: 2.3, 2.5, 2.6

courtesy: Joe Kahlig

- $\frac{-3}{7}$
- ∞
- $\sqrt{20}$
 - 17
 - DNE since $\lim_{x \rightarrow 3^+} f(x) = 17$ and $\lim_{x \rightarrow 3^-} f(x) = 5$
- DNE
since $\lim_{x \rightarrow 2^+} \frac{|3x - 6|}{x - 2} = 3$ and $\lim_{x \rightarrow 2^-} \frac{|3x - 6|}{x - 2} = -3$
- $\frac{-1}{16}$
- $\frac{1}{18}$
- $-\infty$
- 3
- not continuous at $x = -5$ since $\lim_{x \rightarrow -5} f(x)$ does not exist.

not continuous at $x = 2$ since $\lim_{x \rightarrow 2} f(x) \neq f(2)$

continuous at $x = 4$ since $\lim_{x \rightarrow 4} f(x) = 5$ and $f(4) = 5$
- not continuous at $x = -5$ and $x = 4$.

 $x = -5$ is a removable discontinuity. $g(x) = \frac{1}{x - 4}$
note: $x = 4$ is a vertical asymptote.
 - not continuous at $x = 0$, $x = 4$, and $x = -10$
 $x = 0$ is a removable discontinuity. $g(x) = \frac{x(x + 5)}{(x - 4)(x + 10)}$
note: $x = 4$ and $x = -10$ are vertical asymptotes.
- not continuous at $x = -1$
- answers may vary
 $[0, 3]$
- $[2, 3]$
- $A = -2, B = -6$
- $\frac{1}{4}$
 - 0

(c) $+\infty$

(d) $\frac{\sqrt{7}}{3}$

(e) $\frac{-\sqrt{3}}{5}$

(f) $\frac{-5}{14}$

16. Horizontal asymptote: $y = \frac{1}{4}$

Vertical asymptote: $x = \frac{-3}{4}$