

What day of the month is your birthday? ___

What are the last 2 digits of your address? ___

What are the last 2 digits of your zip code? ___

What are the last 2 digits of your social security number? ___

[IF YOU DO NOT HAVE A SOCIAL SECURITY NUMBER,
USE YOUR STUDENT ID NUMBER]Graph the function $f(x) = \frac{1-x}{x^2}$ using the full procedure discussed in class.

SCORE: ___ / 20 POINTS

[1] DOMAIN $\{x \neq 0\}$
DISCONTINUITY AT $x=0$ [2] X-INT: $\frac{1-x}{x^2} = 0 \Rightarrow x=1$ Y-INT: DNE ($x=0 \notin \text{DOMAIN}$)[3] $\lim_{x \rightarrow 0^-} \frac{1-x}{x^2} = \infty$ ($\frac{1}{0^+}$)
 $\lim_{x \rightarrow 0^+} \frac{1-x}{x^2} = \infty$ ($\frac{1}{0^+}$) } VA $\frac{1}{2}$

↑ STATED OR DRAWN

[4] $\lim_{x \rightarrow \infty} \frac{1-x}{x^2} = \lim_{x \rightarrow \infty} \frac{-1}{2x} = 0$
 $\lim_{x \rightarrow -\infty} \frac{1-x}{x^2} = \lim_{x \rightarrow -\infty} \frac{-1}{2x} = 0$ } HA $\frac{1}{2}$

↑ STATED OR DRAWN

[5] $f(x) = x^{-2} - x^{-1}$

$f'(x) = -2x^{-3} + x^{-2} = -x^{-3}(2-x)$	DNE IF $x=0 \notin \text{DOMAIN}$
$= 0$ IF $x=2$	POINT $(2, -\frac{1}{4})$
$f''(x) = 6x^{-4} - 2x^{-3} = 2x^{-4}(3-x)$	DNE IF $x=0 \notin \text{DOMAIN}$
$= 0$ IF $x=3$	POINT $(3, -\frac{2}{9})$

[6] N/A

$-x^{-3}$	+	-	-	-
$2-x$	+	+	-	-
$2x^{-4}$	+	+	+	+
$3-x$	+	+	+	-

f'	+	-	+	+
f''	+	+	+	-
	VA		MIN	IP

