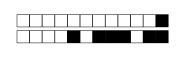
MA140: <u>SAMPLE</u> Class Test 1

Your ID number	Your name:
	Instructions
	• Duration: 40 minutes
3 3 3 3 3 3 3	• You may not use notes, calculator, or any
	electronic device.
	• Encode your ID number in the boxes on the
	left. The 1st digit of your ID number goes
	in the 1st column, the 2nd digit in the 2nd column, etc.
	• Each question has one correct answer. Use
	a dark coloured pen or pencil and com-
	pletely fill answer boxes corresonding to
	your choice Good Bad
Question 1 What is the largest possible subset of	\mathbb{R} that could be the domain of the function:
$f(x) = \frac{2x}{x^2 + 2x - 8}?$	
\square all of \mathbb{R}	x = 2 and x = -4 $(-\infty, -4) \cup (-4, 2) \cup (2, \infty)$
	$(-\infty, -4) \cup (-4, 2) \cup (2, \infty)$
	Ŷ <i>m</i> 19
	s to $f(x) = \frac{8x - 12}{x^2 - 2x - 3}$ expressed as partial
fractions?	
x+3 $x-1$ $x+3$ $x-1$	- $x-3$ $x+1$ $ x-3$ $x+1$
$\begin{cases} x+2 & x \leq -2 \\ x & x \leq -2 \end{cases}$	
Question 3 Let $f(x) = \begin{cases} x+2 & x \le -2 \\ -x & x > 2. \end{cases}$ Why	y type of discontinutity does f have at $x = 2$?
	Name (file and)
Jump discontinutity	None $(f \text{ is continuous})$
Infinite discontinuity	Removable discontinuity
$x^2 + 3x - 4$	
Question 4 What does $\lim_{x\to -4} \frac{x^2+3x-4}{x^2+x-12}$ evaluation	te as?

For your examination, preferably print documents compiled from auto-multiple-choice.



Question 5 Let $f(x) = \frac{x^2 - 2x - 15}{3x^3 - 6x^2 - 45x}$. Which *one* of the following statements is true?

$$\lim_{x \to 0^+} f(x) = -\infty$$

$$\lim_{x \to 0^+} f(x) = 0$$

$$\lim_{x\to 0} f(x)$$
 exists

Suppose that $g(x) = 2x^4 + x^2$, and f(x) is such that $-g(x) \le f(x) \le g(x)$ for all Question 6 x. Which one of the following statements is true?

- One cannot use the Squeeze Theorem to determine $\lim_{x \to a} f(x)$
- One can use the Squeeze Theorem to determine $\lim_{x \to 1} f(x)$
- \Box One can use the Squeeze Theorem to determine $\lim_{x\to 0} f(x)$
- One can use the Squeeze Theorem to determine $\lim_{x\to 1^+} f(x)$

Question 7 Let $f(x) = \frac{1}{x^2 - 1}$. Which one of the following statements is correct?

- \Box f does not have any has vertical asymptotes
- $\int f$ has one vertical asymptote, which is at x=1
- f has two vertical asymptotes, which are at x = 1 and x = -1
- $\int f$ has one vertical asymptote, which is at x = -1

$$f'(0) = 1$$

$$f'(1) = 0$$

$$f'(-2) = 12$$

$$f'(1) = -1$$

Question 9 Let $f(x) = -4x^3 + 2x^2 - 4$. Which one of the following is the tangent to f at x = -1?

$$\square u - -\iota$$

Question 10 Let $f(x) = \frac{x^2}{1+x}$. Which one of the following is correct?

$$f'(1) = \frac{1}{4}$$

$$f'(1) = -3$$

$$f'(1) = -\frac{1}{4}$$

For your examination, preferably print documents compiled from auto-multiple-choice.