

Quiz 3 for Mathematics 223
Introductory Analysis I - Spring 2000
Material Covered: Section 3.2 of workbook and text
For: Wednesday, 23rd February

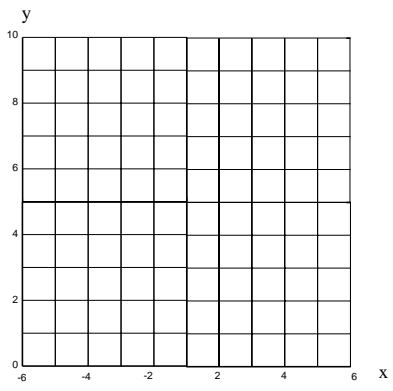
This is a 15 minute quiz, worth 6% and marked out of 6 points. The total possible points awarded for each question is given in square brackets at the beginning of each question. Anything that can fit on one side of an $8\frac{1}{2}$ by 11 inch piece of paper may be used as a reference during this quiz. A calculator may also be used. No other aids are permitted.

Name (please print): _____ . ID Number: _____
last first

1. [2] Function $f(x) = 2x^3 - 5x^2 - 11x$ increases on interval(s) (circle *none*, *one* or *more*) (yes, there could be more than one interval!) $(-\infty, -0.91)$ / $(2.42, \infty)$ / $(-0.66, 2.12)$ / $(2.12, \infty)$ / $(-\infty, -0.76)$

2. [2] Function $f(x) = x^4 - 8x^3 + 12x - 24$ is concave up on interval(s) _____

3. [2] Sketch the graph of the function that satisfies all of the given conditions.
 - (i) f is continuous everywhere except at $x = 2$
 - (ii) $\lim_{x \rightarrow 2^-} f(x) = 2$ and $\lim_{x \rightarrow 2^+} f(x) = 0$
 - (iii) $f'(x) = 1$ on $(2, \infty)$
 - (iv) $f''(x) > 0$ on $(-\infty, -2)$ and $f''(x) < 0$ on $(-2, 2)$



1. [2] $(2.42, \infty), (-\infty, -0.76)$ (sketch using $(-10,10)$ and $(-40,40)$)
2. [2] $(-\infty, 0), (2.42, \infty)$ (sketch using $(-10,10)$ and $(-400,40)$)
3. [2] Sketch