Test Canvas: MAT 131 Midterm 1 Online Portion (**Webcam**) - Requires Respondus LockDown Browser

The Test Canvas lets you add, edit, and reorder questions, as well as review a test. More Help

Question Settings

You can edit, delete, or change the point values of test questions on this page. If necessary, test attempts will be regraded after you submit your changes.

Description	MAT 131 Midterm 1 Online Portion
Instructions	The following 10 questions are multiple choice. Please choose one answer for each question. Each question is worth 1 point, for a total of 10 possible points on this online exam (together with the 50 possible points on the written exam, for a total of 60 possible points for the written and online exams combined).
Total Questions	10
Total Points	10
Number of Attempts	190

Select: All None Select by Type: - Question Type -

Points Update and Regrade Hide Question Details

Points: 1

1. Multiple Choice: Problem 1: For every invertible function with do...

Question	For every invertible function with domain (a,b) and with range (c,d), the inverse function of that function has the following domain and range.
Answer	✓ Domain (c,d) and range (a,b).
	Domain (a,b) and range (c,d).

	The largest interval on which any mathematical expression for the inverse function is defined.
	The largest subset of the range on which the function is either increasing or decreasing.

Points: 1

2. Multiple Choice: Problem 2: The Horizontal Line Test says that a ...

Question	The Horizontal Line Test says that a function defined on a subset of the real numbers is an invertible function if and only if the following holds.
Answer	✓ Every horizontal line intersects the graph of the function in at most one point.
	Every horizontal line intersects the graph in at least one point.
	The function is an increasing function or the function is a decreasing function.
	The horizontal line $y=0$ intersects the function in no points.

Points: 1

3. Multiple Choice: Problem 3: According to the Intermediate Value T...

Question	According to the Intermediate Value Theorem, the function $f(x) = x^5 - \cos(\pi x/2)$ has the following property.
Answer	✓ At least one zero in the interval $(-1, +1)$.
	No zeroes in the real line.
	At least one zero in the interval $(+1, +\infty)$.
	At least one zero in the interval $(-\infty, -1)$.

Points: 1

4. Multiple Choice: Problem 4: The horizontal translation of the par...

Question	The horizontal translation of the parabola $y = x^2$ by 3 units in the positive x-direction is the graph of the following function.
Answer	✓ $y = x^2 - 6x + 9$
	$y = (x + 3)^2$
	$y = x^2 + 3$
	$y = (x / 3)^2$

Points: 1

5. Multiple Choice: Problem 5: For a function defined on an interval...

Question	For a function $f(x)$ defined on an interval (a, b), for a real number $x = c$ in that interval, the limit as x approaches c of the function $f(x)$ equals a real number L if and only if the following condition holds.
Answer	✓ Both $\lim_{x \to c^-} f(x)$ and $\lim_{x \to c^+} f(x)$ are defined and both equal L.
	There are real numbers x that are arbitrarily close to $x = c$ such that the corresponding values $f(x)$ are arbitrarily close to L.
	The graph of $f(x)$ satisfies the Horizontal Line Test for all values of x that are sufficiently close to $x = c$.
	After redefining $f(c)$ to equal L, the function $f(x)$ is continuous on a sufficiently small open interval containing $x = c$.

Points: 1

6. Multiple Choice: Problem 6: For every positive integer , the limi...

Question	For every positive integer n, the limit $\lim_{x \to 1} \frac{x^n - 1}{x - 1}$ has the following property.
Answer	✓ The limit equals n.
	The limit is undefined.
	The limit equals nx^{n-1}.
	The limit can only be computed using L'Hopital's Rule (which we have not yet covered).

Points: 1

7. Multiple Choice: Problem 7: If an invertible function defined on ...

Question	If an invertible function defined on an interval (a,b) is continuous, then the inverse function has the following property.
Answer	✓ The inverse function is also continuous.
	The inverse function is sometimes not continuous, but it always satisfies the Vertical Line Test.
	The inverse function is sometimes not continuous, but it always satisfies the Horizontal Line Test.
	The inverse function is either an increasing function or it is a decreasing function, but it sometimes fails to satisfy the Intermediate Value Theorem.

Points: 1

8. Multiple Choice: Problem 8: A function defined on an open interva...

Question	A function defined on an open interval (a,b) is continuous whenever it satisfies the following property.
Answer	✓ It is an increasing function and satisfies the Intermediate Value Theorem.
	It is an increasing function that satisfies the Horizontal Line Test.

It is an increasing function that satisfies the Vertical Line Test.

It is an increasing function such that at every point of the open interval both of the one-sided limits are defined.

Points: 1

9. Multiple Choice: Problem 9: For real numbers and , for every incr...

Question	For real numbers a and b, for every increasing function defined on the open interval (a,b), the following property holds.
Answer	✓ For every point of the interval, neither one-sided limit equals $+\infty$ or $-\infty$ (i.e., neither one-sided limit fails to be equal to a real number for the precise reason that the limit equals $+\infty$ or $-\infty$).
	The one-sided limit can equal $+\infty$ for at most one point of the open interval (and there are examples where this happens).
	The one-sided limit can equal $-\infty$ for at most one point of the open interval (and there are examples where this happens).
	The only discontinuities that can occur are infinite discontinuities.

Points: 1

10. Multiple Choice: Problem 10: For every polynomial function that is...

Question	For every polynomial function $g(x)$ that is not identically zero, and for every polynomial function $h(x)$, the function $f(x) = \frac{h(x)}{g(x)}$ has the following property.
Answer	✓ It is defined, it is continuous, and it is differentiable at every real number $x = c$ such that $g(c)$ is nonzero.
	It is defined, it is continuous, and it is differentiable at the real number $x = c$ so long as the rational function obtained by factoring the numerator by all factors of the form $(x - c)^n$ and factoring the denominator by all factors of the form $(x - c)^m$ is defined, continuous, and differentiable at $x = c$.

It is defined, it is continuous, and it is differentiable at $x = c$ if and only if the highest-degree factor $(x - c)^n$ of the numerator has degree at least as positive as the highest-degree factor $(x - c)^m$ of the denominator.

The one-sided limits of $f(x)$ at $x = c$ are either $+\infty$ or $-\infty$ if $g(c)$ equals 0.

Select: All None Select by Type: - Question Type -

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