Take Test: W8 Final

Test Information
Description
Instructions
Multiple Attempts Not allowed. This test can only be taken once.
Force Completion This test can be saved and resumed later.

Question Completion Status:

QUESTION 1 — 2 points — Save Answer

Find the limit.

$\lim_{x \to -2} \sqrt{x^2 + 8x + 16}$

- 121
- does not exist
- ±11
- 11

QUESTION 2 — 2 points — Save Answer

Use the properties of logarithms to find the exact value of the expression. Do not use a calculator.

$\log_6 6^{-9}$

- -54
- 6
- -9
- 1

QUESTION 3 — 2 points — Save Answer

Use the properties of logarithms to find the exact value of the expression. Do not use a calculator.

$\ln e^{2\sqrt{2}}$

- 8
- e
- $2\sqrt{2}$
- 64

QUESTION 4 — 2 points — Save Answer

Solve the equation.

$\ln \sqrt{x + 2} = 2$

- $\left\{\frac{e^2}{2} + 2\right\}$
- $\{e^4 - 2\}$
- $\{e^4 + 2\}$
- $\{e^2 - 2\}$

QUESTION 5 — 2 points — Save Answer

Solve the equation.

$\log_{42} (x^2 - x) = 1$

- {-6, -7}
- {-6, 7}
- {1, 42}
- {6, 7}

QUESTION 6 — 2 points — Save Answer

Find the limit.

$\lim_{x \to -1} \frac{x}{3x + 2}$

- 0
- $-\frac{1}{3}$
- does not exist
- 1

QUESTION 7 — 2 points — Save Answer

Solve the equation.

$3 + 8 \ln x = 10$

- $\left\{\ln\left(\frac{7}{8}\right)\right\}$
- $\{e^{7/8}\}$
- $\left\{\frac{e^7}{8}\right\}$
- $\left\{\frac{7}{8 \ln 1}\right\}$

QUESTION 8 — 2 points — Save Answer

Find the integral.

$\int\left(\sqrt{x} + \frac{1}{x^4}\right) dx$

- $\frac{2}{3}x^{3/2} - \frac{1}{3x^3} + C$
- $\frac{2}{3}x^{3/2} - \frac{1}{4x^4} + C$
- $2x\sqrt{x} - \frac{1}{4x^4} + C$
- $2x\sqrt{x} - \frac{1}{3x^3} + C$

QUESTION 9 — 2 points — Save Answer

Find the domain of the function.

$h(x) = \frac{x - 2}{x^3 - 64x}$

- $\{x \mid x \neq 0\}$
- all real numbers
- $\{x \mid x \neq -8, 0, 8\}$
- $\{x \mid x \neq 2\}$

QUESTION 10 — 2 points — Save Answer

Determine if the given function can be extended to a continuous function at $x = 0$. If so, approximate the extended function's value at $x = 0$ (rounded to four decimal places if necessary). If not, determine whether the function can be continuously extended from the left or from the right and provide the values of the extended functions at $x = 0$. Otherwise write "no continuous extension."

$f(x) = \frac{10^{2x} - 1}{x}$

- No continuous extension
- f(0) = 0 only from the right
- f(0) = 0
- f(0) = 0 only from the left

2 points — Save Answer

Click Save and Submit to save and submit. Click Save All Answers to save all answers.

Save All Answers | **Save and Submit**

$f(x) = \frac{x-1}{x^2+5x+10}$

- Absolute minimum of - 1 at x = -3; no absolute maxima
- Absolute minimum of $-\frac{5}{6}$ at x = -4; absolute maximum of $\frac{1}{15}$ at x = 5
- No absolute extrema
- Absolute minimum of - 1 at x = -3; absolute maximum of $\frac{1}{15}$ at x = 5

QUESTION 12 — 2 points — Save Answer

Solve the equation.

$e^{2x} = 7$

- $\{2 \ln 7\}$
- $\left\{\frac{7}{2}e\right\}$
- $\left\{\frac{\ln 2}{7}\right\}$
- $\left\{\frac{\ln 7}{2}\right\}$

Question Completion Status:

QUESTION 13 — 2 points — Save Answer

Use the properties of logarithms to find the exact value of the expression. Do not use a calculator.

$\log_4 24 - \log_4 6$

- 24
- 1
- 6
- 4

QUESTION 14 — 2 points — Save Answer

Determine if the given function can be extended to a continuous function at $x = 0$. If so, approximate the extended function's value at $x = 0$ (rounded to four decimal places if necessary). If not, determine whether the function can be continuously extended from the left or from the right and provide the values of the extended functions at $x = 0$. Otherwise write "no continuous extension."

$f(x) = \frac{\tan x}{x}$

- f(0) = 1 only from the left
- f(0) = 1 only from the right
- No continuous extension
- f(0) = 1

QUESTION 15 — 2 points — Save Answer

Find the domain of the function.

$\frac{x}{\sqrt{x-6}}$

- all real numbers
- $\{x \mid x \neq 6\}$
- $\{x \mid x \geq 6\}$
- $\{x \mid x > 6\}$

QUESTION 16 — 2 points — Save Answer

Find the integral.

$\int (x\sqrt{x} + \sqrt[3]{x})\, dx$

- $2\sqrt{x} + 2\sqrt[3]{x} + C$
- $2\sqrt{x} + 3\sqrt[3]{x} + C$
- $\frac{1}{2}x^{3/2} + \frac{2}{3}x^{4/3} + C$
- $\frac{2}{3}x^{3/2} + \frac{3}{4}x^{4/3} + C$

QUESTION 17 — 2 points — Save Answer

Determine if the given function can be extended to a continuous function at $x = 0$. If so, approximate the extended function's value at $x = 0$ (rounded to four decimal places if necessary). If not, determine whether the function can be continuously extended from the left or from the right and provide the values of the extended functions at $x = 0$. Otherwise write "no continuous extension."

$f(x) = \frac{\cos 2x}{|2x|}$

- f(0) = 2 only from the left
- f(0) = 2 only from the right
- f(0) = 2
- No continuous extension

QUESTION 18 — 2 points — Save Answer

Find the absolute extrema if they exist as well as where they occur.

$f(x) = 3 - x - 25/x,\ x > 0$

- Absolute maximum of -23 at x = 1; no absolute minimum
- Absolute maximum of -7 at x = 5; no absolute minimum
- Absolute maximum of 13 at x = -5; absolute minimum of 3 at x = 0
- Absolute minimum of -7 at x = 5; no absolute maximum

QUESTION 19 — 2 points — Save Answer

Find the limit if it exists.

$\lim_{x \to -2} (x+3)^2(x-3)^3$

- -3125
- 25
- 1
- -125

QUESTION 20 — 2 points — Save Answer

Find the intervals on which the function is continuous.

$y = \frac{5}{|x|+4} - \frac{x^2}{7}$

- discontinuous only when x = -11
- discontinuous only when x = -4
- discontinuous only when x = -7 or x = -4
- continuous everywhere

QUESTION 21 — 2 points — Save Answer

Use the properties of logarithms to find the exact value of the expression. Do not use a calculator.

$\log_{238} 14 + \log_{238} 17$

- 17
- 14
- 238
- 1

QUESTION 22 — 2 points — Save Answer

Find the limit, if it exists.

$\lim_{x \to 0} \frac{\sqrt{1+x}-1}{x}$

- 0
- Does not exist
- 1/4
- 1/2

QUESTION 23 — 2 points — Save Answer

Find the intervals on which the function is continuous.

Click Save and Submit to save and submit. Click Save All Answers to save all answers.

Save All Answers | **Save and Submit**

- discontinuous only when x = 15
- discontinuous only when x = -24
- discontinuous only when x = -3
- continuous everywhere

QUESTION 24 — 2 points — Save Answer

Determine if the given function can be extended to a continuous function at $x = 0$. If so, approximate the extended function's value at $x = 0$ (rounded to four decimal places if necessary). If not, determine whether the function can be continuously extended from the left or from the right and provide the values of the extended functions at $x = 0$. Otherwise write "no continuous extension."

$f(x) = (1 + 2x)^{1/x}$

- f(0) = 5.4366
- f(0) = 7.3891
- f(0) = 2.7183
- No continuous

Question Completion Status:

QUESTION 25 — 2 points — Save Answer

Find the absolute extrema if they exist as well as where they occur.

$f(x) = -3x^4 + 16x^3 - 18x^2 + 9$

- Absolute maximum of 4 at x = 1; no absolute minima
- Absolute maximum of 36 at x = 3; no absolute minima
- Absolute maximum of 17 at x = 2; no absolute minima
- No absolute extrema

QUESTION 26 — 2 points — Save Answer

Find the limit if it exists.

$\lim_{x \to -3} \sqrt{9x + 89}$

- $-\sqrt{62}$
- $\sqrt{62}$
- -62
- 62

QUESTION 27 — 2 points — Save Answer

Solve the equation.

$e^{x+6} = 8$

- {ln 8 - 6}
- {ln 14}
- $\{e^8 + 6\}$
- $\{e^{48}\}$

QUESTION 28 — 2 points — Save Answer

Find the domain of the function.

$f(x) = x^2 + 8$

- $\{x \mid x \geq -8\}$
- all real numbers
- $\{x \mid x > -8\}$
- $\{x \mid x \neq -8\}$

QUESTION 29 — 2 points — Save Answer

Find the limit if it exists.

$\lim_{x \to 256} x^{3/4}$

- $\frac{3}{4}$
- 64
- 256
- 192

QUESTION 30 — 2 points — Save Answer

Find the intervals on which the function is continuous.

$y = \frac{5}{x^2 - 16}$

- discontinuous only when x = -4 or x = 4
- discontinuous only when x = -16 or x = 16
- discontinuous only when x = -4
- discontinuous only when x = 16

QUESTION 31 — 2 points — Save Answer

Find the limit.

$\lim_{x \to 0} (x^3 + 5x^2 - 7x + 1)$

- 0
- 29
- does not exist
- 15

QUESTION 32 — 2 points — Save Answer

Find the limit, if it exists.

$\lim_{h \to 0} \frac{17x + h}{x^3(x - h)}$

- 17x
- Does not exist
- $\frac{17}{x^3}$
- $\frac{17}{x^4}$

QUESTION 33 — 2 points — Save Answer

Find the integral.

$\int \left(\frac{7}{x} - 5e^{-0.7x}\right) dx$

- $\frac{14}{x^2} - \frac{7}{2}e^{-0.7x} + C$
- $-\frac{7}{x^2} + \frac{7}{2}e^{-0.7x} + C$
- $7 \ln|x| - \frac{50}{7}e^{-0.7x} + C$
- $7 \ln|x| + \frac{50}{7}e^{-0.7x} + C$

QUESTION 34 — 2 points — Save Answer

Find the intervals on which the function is continuous.

$y = \frac{1}{x + 3} - 4x$

- continuous everywhere
- discontinuous only when x = -7
- discontinuous only when x = 3
- discontinuous only when x = -3

QUESTION 35 — 2 points — Save Answer

Find the intervals on which the function is continuous.

$y = \frac{x + 3}{x^2 - 7x + 10}$

Click Save and Submit to save and submit. Click Save All Answers to save all answers.

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- discontinuous only when x = -2 or x = 5

QUESTION 36 — 2 points — Save Answer

Find the domain of the function.

$f(x) = \sqrt{23 - x}$

- $\{x \mid x \neq \sqrt{23}\}$
- $\{x \mid x \leq \sqrt{23}\}$
- $\{x \mid x \neq 23\}$
- $\{x \mid x \leq 23\}$

QUESTION 37 — 2 points — Save Answer

Use the properties of logarithms to find the exact value of the expression. Do not use a calculator.

Question Completion Status:

$\log_5 30 - \log_5 6$

- 5
- 6
- 30
- 1

QUESTION 38 — 2 points — Save Answer

Find the limit.

$\lim_{x \to 3} (3x^5 - 2x^4 + 4x^3 + x^2 + 5)$

- 41
- 105
- 57
- 169

QUESTION 39 — 2 points — Save Answer

Find the integral.

$\int \left(\frac{5}{x^2} - \frac{4}{\sqrt{x}} \right) dx$

- $\frac{5}{x} - 8\sqrt{x} - C$
- $\frac{5}{x} - \frac{8}{\sqrt{x}} + C$
- $-\frac{5}{x} - \frac{8}{\sqrt{x}} + C$
- $-\frac{5}{x} - 8\sqrt{x} + C$

QUESTION 40 — 2 points — Save Answer

Use the properties of logarithms to find the exact value of the expression. Do not use a calculator.

$\ln e^{2\sqrt{2}}$

- e
- 8
- $2\sqrt{2}$
- 64

QUESTION 41 — 2 points — Save Answer

Find the limit, if it exists.

$\lim_{h \to 0} \frac{(1+h)^{1/3} - 1}{h}$

- 3
- 0
- Does not exist
- 1/3

QUESTION 42 — 2 points — Save Answer

Find the limit if it exists.

$\lim_{x \to 3} (x - 24)^{1/3}$

- 3
- 9
- -3
- 1

QUESTION 43 — 2 points — Save Answer

Find the integral.

$\int \frac{\sqrt{x} - 4}{2x\sqrt{x}} dx$

- $\frac{1}{2} \ln|x| + 4x^{-1/2} + C$
- $\frac{1}{2}\sqrt{x} \ln|x| - 4x^{-1/2} + C$
- $\frac{1}{2}\sqrt{x} \ln|x| + 4x^{-1/2} + C$
- $\frac{1}{2} \ln|x| - 4x^{-1/2} + C$

QUESTION 44 — 2 points — Save Answer

Solve the equation.

$9 \ln 5x = 36$

- $\left\{ \frac{4}{\ln 5} \right\}$
- $\{e^4\}$
- $\left\{ \frac{e^4}{5} \right\}$
- $\{e^{4/5}\}$

QUESTION 45 — 2 points — Save Answer

Find the domain of the function.

$f(x) = \frac{x^2}{x^2 + 4}$

- $\{x \mid x \neq 0\}$
- $\{x \mid x \neq -4\}$
- $\{x \mid x > -4\}$
- all real numbers

QUESTION 46 — 2 points — Save Answer

Find the integral.

$\int (x^{4/3} - 3x^{5/2}) dx$

- $\frac{3}{4}x^{7/3} - \frac{4}{7}x^{7/2} + C$
- $\frac{3}{7}x^{7/3} - \frac{6}{7}x^{7/2} + C$
- $\frac{3}{7}x^{7/3} - \frac{2}{7}x^{7/2} + C$
- $\frac{3}{4}x^{7/3} - \frac{3}{7}x^{7/2} + C$

QUESTION 47 — 2 points — Save Answer

Find the domain of the function.

$g(x) = \frac{x}{x^2 - 49}$

Click Save and Submit to save and submit. Click Save All Answers to save all answers.

Save All Answers | **Save and Submit**

- $\{x \mid x \neq 0\}$

QUESTION 48 — 2 points — Save Answer

Find the integral.

$\int \frac{x^5+1}{x}\,dx$

- $\frac{1}{5}x^5 + \ln|x| + C$
- $\frac{1}{3}x^4 - \ln|x| + C$
- $\frac{1}{5}x^5 - \ln|x| + C$
- $\frac{1}{3}x^4 + \ln|x| + C$

QUESTION 49 — Question Completion Status: — 2 points — Save Answer

Find the integral.

$\int \frac{3\sqrt{x}-5}{x^2}\,dx$

- $-\frac{6}{\sqrt{x}} - \frac{5}{x} + C$
- $\frac{6}{\sqrt{x}} - \frac{5}{x} + C$
- $\frac{6}{\sqrt{x}} + \frac{5}{x} + C$
- $-\frac{6}{\sqrt{x}} + \frac{5}{x} + C$

QUESTION 50 — 2 points — Save Answer

Find the limit, if it exists.

$\lim_{h \to 0} \frac{2}{\sqrt{3h+4}+2}$

- Does not exist
- 1/2
- 1
- 2

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