

Name _____ Score _____

Calculus Warm-up # 1-A
NO CALCULATORS THIS WEEK!

- 1) Find the domain of the function
 $f(x) = \sqrt{x-3}$ _____
- 2)) Find the domain of the function
 $f(x) = \sqrt{x-3}$ _____
- 3) For what value of x is the function
 $y = \frac{17}{3-x}$ undefined? _____
- 4) What is the y -intercept of the graph of
the function $y = \frac{13+2x}{x-7}$? _____
- 5) True or False? $-3^2 = |-3^2|$ _____

Name _____ Score _____

Calculus Warm-up # 1-B
NO CALCULATORS THIS WEEK!

- 6) Find the value of $4^{\frac{3}{2}}$ _____
- 7) True or False? $25^{-\frac{1}{2}} = -5$ _____
- 8) Find the domain of the function
 $y = \sqrt{x}$ _____
- 9) Find the domain of the function
 $y = (x-7)^{\frac{3}{2}}$ _____
- 10) Find the range of the function
 $y = 2x$. _____

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Calculus Warm-up # 1-C
NO CALCULATORS THIS WEEK!

- 11) If $f(x) = x^2 - 7x + 12$, find $f(-5)$.

- 12) If $f(x) = (x-3)(x-4)$, find $f(12)$.

- 13) Find the domain of the function
 $y = \sqrt{x+5}$. _____
- 14) Find the domain of the function
 $y = \frac{1}{\sqrt{x+5}}$. _____
- 15) For what values of x is the function
 $f(x) = \frac{x}{x^2-1}$ undefined? _____

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Calculus Warm-up #1-D
NO CALCULATORS THIS WEEK!

- 16) At what point, besides the origin, do the
graphs of $y = x^2$ and $y = x^3$ intersect?

- 17) True or False? If x is any Real number,
then $\sqrt{x^2+25}$ is also a Real number.

- 18) Find $f(5)$ if $f(x) = x^2 - 8x + 15$

- 19) Find $f(5)$ if $f(x) = (x-3)(x-5)$

- 20) True or False? If $x = -3$,
then $\sqrt{x^2+7} = |x-1|$ _____

Name _____ Score _____

Calculus Warm-up # 2-A
NO CALCULATORS THIS WEEK!

- 1) Find the domain of the function

$$f(x) = \frac{x^2 + 7}{x^2 + 25} \quad \underline{\hspace{2cm}}$$

- 2)) Find the domain of the function

$$f(x) = \frac{x^2 - 2}{x^2 - 25} \quad \underline{\hspace{2cm}}$$

- 3) True or False? If $x \in \mathbb{R}$, then $x^2 + 25$ is always positive. _____

- 4) For what value of x is the function

$$f(x) = \frac{x^2 - 4}{x - 2} \text{ undefined?} \quad \underline{\hspace{2cm}}$$

- 5) $\sin(7\pi/6) =$ _____

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Calculus Warm-up # 2-B
NO CALCULATORS THIS WEEK!

- 6) True or False? If $x > \pi/2$, then $\sin 12x > 1$. _____

- 7) True or False? $y = -\sin x$ is a reflection of the sine graph about the x -axis. _____

- 8) For what value of x is the function $f(x) = \frac{6x}{\sin x}$ undefined in the interval $[\pi/2, 3\pi/2]$? _____

- 9) Find the domain of the function $f(x) = \sqrt{9 - x^2}$ _____

- 10) $\cos(3\pi/2) =$ _____

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Calculus Warm-up # 2-C
NO CALCULATORS THIS WEEK!

- 11) On what interval is the function

$$f(x) = \sqrt{9 - x^2} \text{ defined?} \quad \underline{\hspace{2cm}}$$

- 12) Find the x -intercept of the function

$$f(x) = \frac{x + 7}{x^2 - 6x + 8} \quad \underline{\hspace{2cm}}$$

- 13) Find the slope of the line whose equation is $6x + 3y = 11$. _____

- 14) Find the slope of the line that goes through $(7, 2)$ and $(-1, 0)$ _____

- 15) $\tan(3\pi/4) =$ _____

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Calculus Warm-up # 2-D
NO CALCULATORS THIS WEEK!

- 16) Find the value of $(-8)^{1/3}$ _____

- 17) Multiple Choice.

What is the value of $-4^{1/2}$?

- A. -2 B. dne C. 2 D. -1/2

- 18) True or False? Given that $y = 1/x$, if $x > 100$, $y < .01$ _____

- 19) Multiple Choice. How does the graph of $f(x) - 7$ compare to the graph of $f(x)$?
A. slide 7 units up B. slide 7 units left
C. slide 7 units down D. slide 7 units right

- 20) $\csc(2\pi/3) =$ _____

Name _____ Score _____

Calculus Warm-up # 3-A
NO CALCULATORS TODAY

- 1) $\sin(-3\pi/2)$ _____
- 2) Is the function $f(x) = 6x^2$ a one-to-one function? _____
- 3) Find the inverse of the function $f(x) = x^2 + 5$, where $x \geq 0$ _____
- 4) Find the domain of the function $y = \sqrt{\frac{x-5}{x-4}}$ _____
- 5) Find the y-intercept of the graph of $y = e^x + 5$ _____

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Calculus Warm-up # 3-B
NO CALCULATORS TODAY

- 6) True or False? If f and g are nonzero functions, then $f(g(x)) = g(f(x))$. _____
- 7) At how many points do the graphs of $y = 3x^3 + 1$ and $y = 3x^3 + 6$ intersect? _____
- 8) For what value of x between π and 3π is $y = \frac{5x}{\cos x - 1}$ undefined? _____
- 9) Write the equation of the line with slope 7 that passes through the point $(6, -2)$. _____
- 10) Simplify: $\frac{(x^6)^4}{x^2}$ _____

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Calculus Warm-up # 3-C
NO CALCULATORS TODAY

- 11) If $f(x) = \frac{x^3 - x}{x^2 + 1}$, find $f(3)$. _____
- 12) Find $f(-3)$ for the function above. _____
- 13) Is the function referred to above an even function, an odd function, or neither? _____
- 14) $\sec(2\pi/3)$ _____
- 15) Find the vertical asymptote of the graph of the function $f(x) = \frac{3}{2^x - 1}$ _____

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Calculus Warm-up #3-D
CALCULATORS ARE ALLOWED

- 16) Is the function $y = 2x^7 + 3x^5 - x + 2$ an even function, an odd function, or neither? _____
- 17) Is the above function one-to-one? _____
- 18) If the graph of $f(x) = x^2$ is shifted two units to the right to form $g(x)$, what would be the equation of $g(x)$? _____
- 19) Write the equation of the line through the point $(-9, 2)$ that is parallel to $2x - 5y = 16$ _____
- 20) Simplify: $(x - 2y)^2 - (xy^2 - y^2)$ _____

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Calculus Warm-up # 4-A
NO CALCULATORS THIS WEEK!

1) $\sin(\pi/2)$ _____

2) $\cos(3\pi/4)$ _____

3) $\tan(-\pi/4)$ _____

4) $\sec(\pi/3)$ _____

5) Simplify:
 $\frac{(2x^2)^3}{x^{10}}$ _____

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Calculus Warm-up # 4-B
NO CALCULATORS THIS WEEK!

On # 6-9, Solve for x , when $0 \leq x < 2\pi$

6) $\cos x = 0$ _____

7) $\sin x = -1/2$ _____

8) $\sec x = 2$ _____

9) $\tan x = 1$ _____

10) Find the domain of $y = \frac{3x}{x^2 - 5x}$

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Calculus Warm-up # 4-C
NO CALCULATORS THIS WEEK!

11) $\tan(5\pi/4)$ _____

12) $\cos(-\pi)$ _____

13) $\csc(\pi)$ _____

14) $\sin(-5\pi/3)$ _____

15) Does $y = |x^3 - x|$ have even or
odd symmetry? _____

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Calculus Warm-up # 4-D
NO CALCULATORS THIS WEEK!

On #16-18, solve for x when $0 \leq x < 2\pi$.

16) $\sin x = \frac{\sqrt{2}}{2}$ _____

17) $\cos x = \frac{\sqrt{3}}{2}$ _____

18) $\csc x = -1$ _____

19) What is the domain of $y = \tan x$?

20) Write the equation of the line
through $(9, -4)$ and $(-1, 5)$

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Calculus Warm-up # 5-A
NO CALCULATORS THIS WEEK!

1) $\lim_{x \rightarrow 2} (3x^2 - 4)$ _____

2) $\lim_{x \rightarrow 3} (2^x)$ _____

3) $\lim_{x \rightarrow 0} \cos 2x$ _____

4) $\lim_{x \rightarrow 0} \lfloor x \rfloor$ _____

5) Write the equation of the vertical line through the point (-6, 8).

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Calculus Warm-up # 5-B
NO CALCULATORS THIS WEEK!

6) Find $f(4)$ if $f(x) = x + 5$ _____

7) Find $f(4)$ if $f(x) = \frac{x^2 - 25}{x - 5}$ _____

8) For what value of x is $f(x) = \frac{x^2 - 25}{x - 5}$ undefined? _____

9) $\lim_{x \rightarrow 4} \frac{x^2 - 25}{x - 5} =$ _____

10) $\lim_{x \rightarrow 5} \frac{x^2 - 25}{x - 5} =$ _____

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Calculus Warm-up # 5-C
NO CALCULATORS THIS WEEK!

11) $\lim_{x \rightarrow b^-} f(x) =$ _____

12) $\lim_{x \rightarrow b^+} f(x) =$ _____

13) True or False? $\lim_{x \rightarrow b} f(x)$ does not exist.

14) $\lim_{x \rightarrow c} f(x) =$ _____

15) True or False? $\lim_{x \rightarrow c^-} f(x) = \lim_{x \rightarrow c^+} f(x)$

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Calculus Warm-up # 5-D
NO CALCULATORS THIS WEEK!

16) Is the function $y = \lfloor x \rfloor$ continuous at $x = 7.2$. _____

17) Is $f(x) = \begin{cases} x^2 + 3, & x < 2 \\ 9 - x, & x \geq 2 \end{cases}$ continuous at $x = 2$? _____

18) Is the function $y = |x - 2|$ continuous at $x = 2$? _____

19) Is the function $y = \frac{x - 2}{x^2 - 4}$ continuous at $x = 2$? _____

20) $\lim_{x \rightarrow 0} \frac{x - 2}{x^2 - 4} =$ _____

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Calculus Warm-up # 6-A
NO CALCULATORS THIS WEEK!

1) $\lim_{x \rightarrow -5} \frac{x+5}{x^2+25} =$ _____

2) $\lim_{x \rightarrow 5} \frac{x+5}{x^2-25} =$ _____

3) $\lim_{x \rightarrow 5} \frac{x-5}{x^2-25} =$ _____

4) $\lim_{x \rightarrow \infty} \frac{x-5}{x^2-25} =$ _____

5) $\lim_{x \rightarrow 0} \frac{x^2-25}{x+25} =$ _____

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Calculus Warm-up # 6-B
NO CALCULATORS THIS WEEK!

6) $\lim_{x \rightarrow \infty} \frac{7}{x} =$ _____

7) $\lim_{x \rightarrow -\infty} \frac{1000}{x^2} =$ _____

8) $\lim_{x \rightarrow 0^+} \frac{7}{x} =$ _____

9) $\lim_{x \rightarrow -7} \frac{7}{x+7} =$ _____

10) Multiple Choice: $\lim_{x \rightarrow 7} (x^{-2}) =$

- A. -14 B. 49 C. $\frac{1}{49}$ D. $\frac{1}{14}$

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Calculus Warm-up # 6-C
NO CALCULATORS THIS WEEK!

11) True or False?

The function $f(x) = \frac{x^2+49}{x-7}$ approaches
98 as x approaches 7.

12) $\lim_{x \rightarrow 10} \frac{10}{x} =$ _____

13) $\lim_{x \rightarrow \infty} \frac{10}{x} =$ _____

14) $\lim_{x \rightarrow 0^+} \frac{10}{x} =$ _____

15) Find the slope of a line perpendicular
to the line $y = 6x - 1$. _____

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Calculus Warm-up # 6-D
NO CALCULATORS THIS WEEK!

16) What is the slope of a line perpendicular
to the line $3y + 5x = 10$? _____

17) $\lim_{x \rightarrow 6} \frac{x-6}{x+6} =$ _____

18) What is the image of the point $(-2, 7)$
when it is reflected across the x -axis?

19) Multiple Choice: $(x^a)^b =$

- A. x^{a+b} B. x^{ab} C. x^{a^b} D. $(x^a)(x^b)$

20) Find the y -intercept of the function
 $g(x) = 5 \cos 2x$ _____

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Calculus Warm-up # 7-A
NO CALCULATORS TODAY!

- 1) Find the domain of the function

$$f(x) = \frac{7}{x+2} \quad \underline{\hspace{2cm}}$$

- 2) Does the graph of $y = \frac{x^2 - 9}{x - 3}$ have a hole or an asymptote at $x = 3$? _____

- 3) Does the graph of $y = \frac{x^2 - 9}{x - 4}$ have a hole or an asymptote at $x = 4$? _____

- 4) True or False? The function $y = \frac{x^2 + 1}{2x}$ is undefined when $x = -1/2$. _____

- 5) If $y = (3x^2 - 2)^6$, find y' . _____

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Calculus Warm-up # 7-B
NO CALCULATORS TODAY!

6) $\lim_{x \rightarrow 0} \frac{5x^2}{6x} = \underline{\hspace{2cm}}$

7) $\lim_{x \rightarrow 0} \frac{5x^2}{6x^2} = \underline{\hspace{2cm}}$

8) $\lim_{x \rightarrow \infty} \frac{5x^2}{6x^2} = \underline{\hspace{2cm}}$

9) $\lim_{x \rightarrow \infty} \frac{5x^2}{6x^5} = \underline{\hspace{2cm}}$

10) If $y = \frac{5}{(x^3 - 2x)^2}$, find y' . _____

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Calculus Warm-up # 7-C
NO CALCULATORS TODAY!

11) $\lim_{x \rightarrow \frac{\pi}{4}} \sin x = \underline{\hspace{2cm}}$

12) $\lim_{x \rightarrow 0} \tan x = \underline{\hspace{2cm}}$

13) $\lim_{x \rightarrow \frac{-\pi}{2}} \cos x = \underline{\hspace{2cm}}$

14) $\lim_{x \rightarrow 0} \frac{1}{\sin x} = \underline{\hspace{2cm}}$

- 15) If $f(x) = -3\cos^4(5x)$, find $f'(x)$ _____

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Calculus Warm-up # 7-D
USE YOUR TI-89 TODAY! Round to 3 decimal places.

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

16) Find $\lim_{x \rightarrow \infty} f(x) = \underline{\hspace{2cm}}$

17) Find $\lim_{x \rightarrow -\infty} f(x) = \underline{\hspace{2cm}}$

18) Find $\lim_{x \rightarrow 0^-} f(x) = \underline{\hspace{2cm}}$

19) Find $\lim_{x \rightarrow 0^+} f(x) = \underline{\hspace{2cm}}$

20) Find $f'(1)$ _____

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Calculus Warm-up # 8-A
NO CALCULATORS TODAY!

- 1) If $u = 3x^4$, find $\frac{du}{dx}$ _____
- 2) If $v = 5x^3$, find $\frac{dv}{dx}$ _____
- 3) Multiply $u \cdot v$, and simplify it.
Call the product y . $y =$ _____
- 4) Find $\frac{dy}{dx}$ _____
- 5) Multiply $\frac{du}{dx}$ and $\frac{dv}{dx}$ from # 1 and # 2.
Is it true that $(uv)' = (u')(v)$? _____

Name _____ Score _____

Calculus Warm-up # 8-B
NO CALCULATORS TODAY!

- 6) If $u = 6x^5$, find $\frac{du}{dx}$ _____
- 7) If $v = 3x^3$, find $\frac{dv}{dx}$ _____
- 8) Find $\frac{u}{v}$, and simplify it.
Call the quotient y . $y =$ _____
- 9) Find $\frac{dy}{dx}$ _____
- 10) Is it true that $\left(\frac{u}{v}\right)' = \frac{u'}{v}$? _____

Name _____ Score _____

Calculus Warm-up # 8-C
NO CALCULATORS TODAY!

- 11) Where does the graph $y = \frac{x^2 - 36}{x + 6}$ have a hole? _____
- 12) Write the equation of the tangent line to $y = x^3 - 4x$ at the point $(1, -3)$.

- 13) Find the slope of the tangent line to $y = 2x^4 + x - 1$ where $x = 2$ _____
- 14) Find the slope of a line which is parallel to the line $2y = 7x - 6$ _____
- 15) Find the y -intercept of the graph of $f(x) = 3x^5 + x^4 - 2x^3 - 7x + 6$ _____

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Calculus Warm-up # 8-D
USE YOUR TI-89 TODAY! Round to 3 decimal places.

- Given $f(x) = \frac{4}{e^{2x} - 1}$
- 16) Find $\lim_{x \rightarrow 0^+} f(x)$ _____
 - 17) Find $\lim_{x \rightarrow -\infty} f(x)$ _____
 - 18) Find $f(\ln 2)$ _____
 - 19) Find $f'(\ln 2)$ _____
 - 20) Find $f''(\ln 2)$ _____

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Calculus Warm-up # 9-A
NO CALCULATORS TODAY!

- 1) Find $\frac{dy}{dx}$ if $y = 6x^5 - \frac{5}{x}$ _____
- 2) Find $\frac{dy}{dx}$ if $y = 7 - 3x^4 + x$ _____
- 3) Find $\frac{dy}{dx}$ if $y = \sqrt{x}$ _____
- 4) Find $\frac{dy}{dx}$ if $y = \sqrt[4]{x^5}$ _____
- 5) What is the vertical asymptote of the function $g(x) = \frac{17-x}{x-4}$? _____

Name _____ Score _____

Calculus Warm-up # 9-B
NO CALCULATORS TODAY!

- 6) Find y' if $y = x^4(7x^2 - 1)$ _____
- 7) Find y' if $y = \frac{5x^2 - 2}{x}$ _____
- 8) Find y' if $y = 800x$ _____
- 9) Find y' if $y = 732$ _____
- 10) The graph of $f(x + 4)$ is a translation of the graph of $f(x)$ 4 units in which direction? _____

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Calculus Warm-up # 9-C
NO CALCULATORS TODAY!

- 11) Find $\frac{dy}{dx}$ if $y = \frac{6x^2}{x-3}$ _____
- 12) Find $\frac{dy}{dx}$ if $y = \frac{9}{x^5}$ _____
- 13) Find $\frac{dy}{dx}$ if $y = (6x^2 - 9)^4$ _____
- 14) Find $\frac{dy}{dx}$ if $y = \frac{1}{x^{2/3}}$ _____
- 15) Find the slope of the curve $y = x^3 - 7x - 2$ where $x = -2$ _____

Name _____ Score _____

Calculus Warm-up # 9-D
USE YOUR TI-89 TODAY! Round to 3 decimal places.

- 16) True or False? For all x , $|x^{12} - 73x - 19| > -5$ _____
- 17) Find the domain of the function $y = \frac{\sqrt{x^2 - 25}}{x^2 - 4}$ _____
- 18) Find $f'(0)$ if $f(x) = 6e^{2x}$ _____
- 19) Find $\lim_{x \rightarrow 0} \frac{\cos x}{x}$ _____
- 20) Find the slope of the curve $y = xe^x$ where $x = 1$ _____

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Calculus Warm-up # 10-A
NO CALCULATORS TODAY!

- 1) Find $\frac{dy}{dx}$ if $y = 9x - 5$ _____
- 2) Find $\frac{dy}{dx}$ if $y = 9x^5$ _____
- 3) Find $\frac{dy}{dx}$ if $y = \frac{9x}{5}$ _____
- 4) Find $\frac{dy}{dx}$ if $y = \sqrt[5]{x^9}$ _____
- 5) What is the domain of the function $y = e^x$? _____

Name _____ Score _____

Calculus Warm-up # 10-B
NO CALCULATORS TODAY!

- 6) Find y' if $y = x^4$ _____
- 7) Find y' if $y = e^{4x}$ _____
- 8) Find y' if $y = e^4$ _____
- 9) Find y' if $y = 4x \cdot e^x$ _____
- 10) What is the y-intercept of the graph of $y = e^x$? _____

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Calculus Warm-up # 10-C
NO CALCULATORS TODAY!

- 11) Find $\frac{dy}{dx}$ if $y = \cos 2x$ _____
- 12) Find $\frac{dy}{dx}$ if $y = \tan(x+2)$ _____
- 13) Find $\frac{dy}{dx}$ if $y = e^x \sin x$ _____
- 14) Find $\frac{dy}{dx}$ if $y = \frac{x}{\cos x}$ _____
- 15) Write the equation of the tangent line to the curve $y = \sin 2x$ at $x = -\frac{\pi}{2}$ _____

Name _____ Score _____

Calculus Warm-up # 10-D
NO CALCULATORS TODAY!

- 16) Find $\log_4 8$ _____
- 17) Find $\log_{25} \frac{1}{5}$ _____
- 18) Solve: $2^{x+2} = 8^{-x}$ _____
- 19) Solve: $\log_3(2x-1) = 4$ _____
- 20) What is the domain of $y = \ln x$? _____