Name: _____ Period: _____ Date: _____

Continuity, End Behavior, and Limits Exit Quiz

Multiple choices

1. Find a value for m so that the function $f(x) = \begin{cases} x^2 - 5 & if\ x < 4 \\ 3mx & if\ x \geq 4 \end{cases}$ is continuous.

a.) $m = \frac{11}{12}$ **b.)** $m = \frac{12}{11}$

c.) $m = 4$ **d.)** $m = -4$

2. The value of $\lim_{x \to 0} 4x^2 - 2x - 10\ is$:

a.) 0 **b.)** 10

c.) -10 **d.)** -1

3. The value of $\lim_{x \to 4} x^3 - 2x\ is$:

a.) 4 **b.)** 56

c.) -56 **d.)** -4

4. Find the value of m so that $f(x)$ is continuous.

a. $f(x) = \begin{cases} 4mx - 5 & if\ x > 2 \\ 2x - 5m & if\ x \leq 2 \end{cases}$

b. $f(x) = \begin{cases} mx - 1 & if\ x > 1 \\ x - 2m & if\ x \leq 1 \end{cases}$

Name: _____ Period: _____ Date: _____

Continuity, End Behavior, and Limits Exit Quiz

5. Evaluate the following limits.

a. $\lim_{x \to 2} f(x) = ?$ $\quad f(x) = \begin{cases} 3x - 7 & if\ x > 2 \\ 2x^2 - 5 & if\ x \leq 2 \end{cases}$

b. $\lim_{x \to 3} x^3 - 3x^2 - 2x - 10 = ?$

Name: _____ Period: _____ Date: _____

Continuity, End Behavior, and Limits Exit Quiz

ANSWERS

Multiple choices

1. Find a value for m so that the function $f(x) = \begin{cases} x^2 - 5 & if\ x < 4 \\ 3mx & if\ x \geq 4 \end{cases}$ is continuous.

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3. The value of $\lim_{x \to 4} x^3 - 2x\ \ is$:

a.) 4 **b.)** 56

c.) -56 **d.)** -4

4. Find the value of m so that $f(x)$ is continuous.

a. $f(x) = \begin{cases} 4mx - 5 & if\ x > 2 \\ 2x - 5m & if\ x \leq 2 \end{cases}$

$4mx - 5 = 2x - 5m \qquad x = 2$

$4m * 2 - 5 = 2 * 2 - 5m$
$8m - 5 = 4 - 5m$
$13m = 9$
$m = \frac{9}{13}$

b. $f(x) = \begin{cases} mx - 1 & if\ x > 1 \\ x - 2m & if\ x \leq 1 \end{cases}$

$mx - 1 = x - 2m \qquad x = 1$

$m * 1 - 1 = 1 - 2m$
$3m = 2$

$m = \frac{2}{3}$

Name: _____ Period: _____ Date: _____

Continuity, End Behavior, and Limits Exit Quiz

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$\lim_{x\to 2^-} 2x^2 - 5 = 2 * 2^2 - 5$

$\lim_{x\to 2^-} 2x^2 - 5 = 2 * 4 - 5$

$\lim_{x\to 2^-} 2x^2 - 5 = 3$

$\lim_{x\to 2^+} 3x - 7 = 3 * 2 - 7$

$\lim_{x\to 2^+} 3x - 7 = -1$

$3 \neq -1$

b. $\lim_{x\to 3} x^3 - 3x^2 - 2x - 10 = ?$

$\lim_{x\to 3} x^3 - 3x^2 - 2x - 10 = ?$

$\lim_{x\to 3} x^3 - 3x^2 - 2x - 10 = 3^3 - 3 * 3^2 - 2 * 3 - 10$

$\lim_{x\to 3} x^3 - 3x^2 - 2x - 10 = 27 - 27 - 6 - 10$

$\lim_{x\to 3} x^3 - 3x^2 - 2x - 10 = -16$