1. Determine whether each of the following is true or false.

T  F  If $0 < |x - 3| < 0.05$, then $|x - 3| < 0.1$.

T  F  $0 < |x - 3| < 0.05$ if and only if $x \in (2.95, 3) \cup (3, 3.05)$.

T  F  For all real numbers $x$, there is some real number $y$ with $y = x^2$.

T  F  There is some real number $y$ such that for all real numbers $x$ we have $y = x^2$.

T  F  There exist real numbers $x < 0$ and $y < 0$ such that $xy < 0$.

T  F  For any real number $x$, if $|x^2 - 5| < 0.2$, then $|x^2 - 5| < 0.1$.

2. Find the domain of the function

$$f(x) = \frac{\sqrt{x^2 - 9}}{x - 5}.$$ 

Show your work clearly so I can see how you arrived at your answer.
3. Fill in the blanks with the appropriate answers.

a) If the point \((-2, 5)\) is on the graph of \(y = f(x)\), then the point ________ is on the graph of \(y = 3f(x - 1)\).

b) If \(f(x)\) is an odd function and the point \((1, -3)\) is on the graph of \(y = f(x)\), the the point ________ must also be on the graph of \(f(x)\).

c) If the point ________ is on the graph of \(y = f(x)\), then the point \((-1, 2)\) is on the graph of \(y = f^{-1}(x)\).

d) If \(f(0) = 2, f(1) = 1, f(2) = 3,\) and \(f(3) = 0,\) then \((f \circ f \circ f)(1) = \) ________.

4. Sketch a rough graph of the function

\[
\frac{(x + 1)(x - 2)(x - 3)}{(x - 2)^2(x - 3)}.
\]
Clearly label any horizontal or vertical asymptotes, and explicitly label the coordinates of any roots or holes.

5. For each quantity below circle ONE of the following.

The quantity \(e^{-2.5}\) is: (negative) (zero) (positive) (undefined)

The quantity \(\ln(\frac{1}{7})\) is: (negative) (zero) (positive) (undefined)

The quantity \(\tan(-\frac{5\pi}{4})\) is: (negative) (zero) (positive) (undefined)

The quantity \(\sin^{-1}(2)\) is: (negative) (zero) (positive) (undefined)
sCRAP

I will not be grading anything on this page

BY COLORING INFINITY YOUR MIND BECOMES CLEAR:

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