A1.3and15. #10

(1 point) **local/rmb-problems/quad-inverse.pg**

Let $f(x) = (x+5)^2 + 5$. Find the largest value of a so that f is one to one on the interval $(-\infty, a]$.

$a =$

Consider f on the domain the interval $(-\infty, a]$ and let g be the inverse of the function f. Give the domain and the range of the function g.

The domain is the interval [ ] and the range is the interval [ ] . help (intervals)

Give a formula for the function g.

$g(x) =$ help (formulas)

A1.4-1.5, #13

Simplify by referring to the appropriate triangle or trigonometric identity.

(Use symbolic notation and fractions where needed.)

$\cot(\sec^{-1}(x))$ = [ ] help (fractions)

Hint: Generate the appropriate triangle and use the definition of a trigonometric function and its inverse.

A1.6 #13

(1 point) **local/rmb-problems/exp-alg2.pg**

A function f is given by the formula $f(x) = A \cdot e^{kx}$ for constants A and k. We also know that $f(2) = 8$ and $f(3) = 1$. Find numerical values for the constants A and k.

$A =$ [ ] , $k =$ [ ] help (numbers).

The function f is [? ▾].

A2.1-2.2 #3

A stone is tossed in the air from ground level with an initial velocity of 30 m/s. Its height at time t is $h(t) = 30t - 4.9t^2$ m.

Compute the stone's average velocity over the time interval $[1, 3.5]$.

Average velocity $=$

A2.3 #8

Evaluate the limit assuming that $\lim_{x \to 2} g(x) = 10$:

$$\lim_{x \to 2} \frac{g(x)}{x^2} = \_\_\_\_$$

A2.4 #14

Let f be defined by

$$f(x) = \begin{cases} x+5, & x \le 2 \\ Ax+B, & 2 < x < 7 \\ 2x+13 & 7 \le x \end{cases}$$

Find the values of A and B which make f continuous everywhere.

$A =$ ______ $B =$ ______

(numbers)

A2.5 #7

i) Decide if the following limit exists $\lim_{x \to \frac{-\pi}{4}} \frac{\sin x + 1 \cdot \cos x}{\tan x + 1}$:

- Yes
- No

ii) If so, evaluate it. Otherwise enter DNE.

(Use symbolic notation and fractions where needed.)

limit =

A2.6 #11

Evaluate the limit:

$$\lim_{t \to 0} \frac{1 - \cos 3t}{\sin 6t} = $$

A2.8 #5

Find an interval (a, b) of length 1 and so that we may use the values of the expression $xe^{\frac{x}{2}}$ at the endpoints of the interval and the intermediate value theorem to show that the equation

$$xe^{\frac{x}{2}} = 2$$

has a solution in the interval (a, b).

$a =$ ____ $b =$ ____