MATH 116
HOMEWORK 08

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9.3

4. *Simplify, and indicate where the simplification is valid:*

(a) $\sin\left(\tan^{-1}(x)\right)$

(b) $\tan\left(\sec^{-1}(x)\right)$

(c) $\sec\left(\sin^{-1}(x)\right)$

(d) $\sin\left(2\tan^{-1}(x)\right)$

(Hint: Use the fact that $\sin(2x) = 2\sin(x)\cos(x)$*)*

Date: December 1, 2015.

10.4

2. *Factor the following expression, if possible:*

$$x^3 - 7x + 6$$

10.5

6. *Rationalize the top or bottom, and simplify.*

$$\frac{x^4 - 36}{x + \sqrt{6}}.$$

8. *Let*

$$f(x) = \frac{1}{\sqrt{2x}}.$$

Calculate

$$\frac{f(x+h) - f(x)}{h}$$

and simplify.

11.1

2. *Let* $f(x) = 2x^2 - 2x$.

(a) Compute $f(x+h)$.

(b) Simplify

$$\frac{f(x+h) - f(x)}{h}.$$