

$$[2] \sinh 3x$$

$$= \sinh(2x+x)$$

$$= \sinh 2x \cosh x + \cosh 2x \sinh x \quad (1)$$

$$(1) = (2 \sinh x \cosh x) \cosh x + (1 - 2 \sinh^2 x) \sinh x$$

$$= 2 \sinh x \cosh^2 x + \sinh x - 2 \sinh^3 x$$

$$= 2 \sinh x (1 - \sinh^2 x) + \sinh x - 2 \sinh^3 x$$

$$= 3 \sinh x - 4 \sinh^3 x$$

$$[3][a] \left[\frac{2}{e^{-3 \ln x} + e^{3 \ln x}} \right]^{(1/2)} = \frac{2}{-3x+3x} = \frac{2}{0} \text{ UNDEFINED}$$

$$[b] \left[\frac{e^{\frac{1}{4} \ln 25} - e^{-\frac{1}{4} \ln 25}}{e^{\frac{1}{4} \ln 25} + e^{-\frac{1}{4} \ln 25}} \right] = \left[\frac{25^{\frac{1}{4}} - 25^{-\frac{1}{4}}}{25^{\frac{1}{4}} + 25^{-\frac{1}{4}}} \right] (*)$$

$$[4][a][i] \left[(-\infty, \infty) \right]^{(1/2)}$$

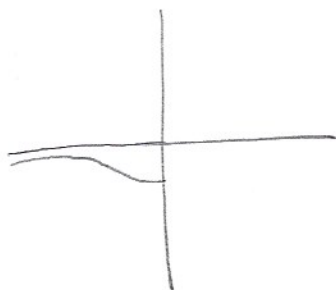
$$[ii] (-\infty, 1]$$

$$[iii] \text{ NO } (*)$$

$$[iv] \text{ EVEN } (*)$$

$$[v] -\infty$$

[b]



$$[5][a] \quad 1 + \tanh^2 x = \operatorname{sech}^2 x$$

$$\operatorname{sech}^2 x = 1 + \left(-\frac{4}{7}\right)^2$$

$$= 1 + \frac{16}{49}$$

$$= \frac{65}{49}$$

$$\operatorname{sech} x = \frac{\sqrt{65}}{7}$$

$$\cosh x = \frac{7}{\sqrt{65}}$$

$$[b] \quad \boxed{\cosh 2x = 2\cosh^2 x - 1} \quad \left(\frac{1}{2}\right)$$

$$= 2\left(\frac{7}{\sqrt{65}}\right)^2 - 1$$

$$= \frac{98}{65} - 1$$

$$= \boxed{\frac{33}{65}} \quad (*)$$

Course

MATH 43

Student ID

11235813

Test

QUIZ 1

Question

2

3

4

5

Points

2

Total

Self Assessment [4 POINTS]

[a] What personal and/or study habits could you change to increase your likelihood of doing better on the next quiz ?

DO HOMEWORK + READ BOOK RIGHT AFTER LECTURE

EVERY DAY

GO TO BED INSTEAD OF PLAYING VIDEO GAMES UNTIL 3AM

STUDY IN A QUIET ROOM AWAY FROM MY NOISY SISTER

[b] Based on your work on the prerequisites review packet and your performance on this quiz, what prerequisite skills should you improve on ?

TRIG IDENTITIES + HOW THEY'RE DIFFERENT FROM

HYPERBOLICS

e AND ln RULES / EXPONENT RULES