

10/25
THU

5.1 (part 2)

Strategies

* Work on the complicated side
* \rightarrow Sines/cosines

* $\frac{a+b}{c} = \frac{a}{c} + \frac{b}{c}$

* $\frac{\frac{a}{b}}{\frac{c}{d}} = \frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \cdot \frac{d}{c}$

* $a^2 - b^2 = (a-b)(a+b)$
Conjugates

diff of squares

$\sin^2 x + \cos^2 x = 1$
 $1 - \cos^2 x$

* Factor difference of squares

$a^2 - b^2 = (a-b)(a+b)$

Conjugates

1) $\tan \theta + \cot \theta = \sec \theta \csc \theta$

* Sines/cosines

$\frac{\sin \theta \cdot \sin \theta}{\cos \theta \cdot \sin \theta} + \frac{\cos \theta \cdot \cos \theta}{\sin \theta \cdot \cos \theta}$

* LCD: $\cos \theta \sin \theta$

$\frac{\sin^2 \theta + \cos^2 \theta}{\cos \theta \sin \theta}$

$\frac{1}{\cos \theta \sin \theta}$

$\sec \theta \csc \theta$

2) $1 - \frac{\sin^2 x}{1 + \cos x} = \cos x$

$1 - \frac{(1 - \cos^2 x)}{(1 + \cos x)}$

$1 - \frac{(1 - \cos x)(1 + \cos x)}{(1 + \cos x)}$

$1 - 1 + \cos x$

$\cos x$