DATE: _____

Unit 6 (Chapter 5): Analytic Trigonometry **Pre-Calculus**

5.3 Fundamental Trig Identities

Target 6B: Prove trigonometric identities

Sum and Difference Identities

$$\sin(\alpha \pm \beta) = \sin\alpha\cos\beta \pm \cos\alpha\sin\beta$$

$$\cos(\alpha \pm \beta) = \cos\alpha\cos\beta \mp \sin\alpha\sin\beta$$

Examples

Find the exact value.

1) $\sin\left(\frac{5\pi}{12}\right)$

2) $\cos\left(\frac{5\pi}{12}\right)$

3) $\cos\left(\frac{11\pi}{12}\right)$

What about Tangent?

$$\tan(\alpha \pm \beta) = \frac{\sin(\alpha \pm \beta)}{\cos(\alpha \pm \beta)}$$

Examples

Find the exact value.

4) $\tan(15°)$

5) $\tan\left(-\frac{\pi}{12}\right)$

More Practice

Proof of Sum & Difference Identities

https://www.youtube.com/watch?v=nt0Nfz5Lc0A
https://www.youtube.com/watch?v=Jo2PhYS8vYE
http://www.themathpage.com/atrig/sum-proof.htm

Using Sum & Difference Identities

http://www.intmath.com/analytic-trigonometry/2-sum-difference-angles.php
http://www.onlinemathlearning.com/sum-identities.html
http://www.purplemath.com/modules/ideneval.htm
http://www.algebralab.org/lessons/lesson.aspx?file=Trigonometry_TrigSumDifference.xml
https://www.youtube.com/watch?v=ZhvvkCa_60w
https://www.youtube.com/watch?v=0ZFxY0uMJy0
https://www.youtube.com/watch?v=yklLtxBOb4s
https://www.youtube.com/watch?v=KuszlL_CJLU

Homework Assignment

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