

5.3 Fundamental Trig Identities

Target 6B: Prove trigonometric identities

Sum and Difference Identities

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

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

<https://www.youtube.com/watch?v=lGelumovyzE>*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) $\tan(15^\circ)$

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.regentsprep.org/regents/math/algtrig/att14/formulalesson.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=KuszIL_CJLU

Homework Assignment

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