

M126 Worksheet - Sum/Difference for Sine and Tangent Section 5.4

Name \_\_\_\_\_

Find the exact value by using a sum or difference identity.

1)  $\sin 15^\circ$

2)  $\tan \frac{7\pi}{12}$

Use a sum or difference identity to find the exact value.

3)  $\sin \frac{7\pi}{24} \cos \frac{\pi}{8} - \cos \frac{7\pi}{24} \sin \frac{\pi}{8}$

4) 
$$\frac{\tan \frac{\pi}{15} + \tan \frac{4\pi}{15}}{1 - \tan \frac{\pi}{15} \tan \frac{4\pi}{15}}$$

Find the exact value of the expression using the provided information.

5) Find  $\sin(B - C)$  given that  $\sin B = -\frac{1}{2}$ , with  $B$  in quadrant IV, and  $\sin C = \frac{1}{4}$ , with  $C$  in quadrant II.

6) Find  $\tan(A - B)$  given that  $\cos A = -\frac{12}{13}$ , with  $A$  in quadrant II, and  $\sin B = \frac{8}{17}$ , with  $B$  in quadrant II.

## Answer Key

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1)  $\frac{(\sqrt{6} - \sqrt{2})}{4}$

2)  $-2 - \sqrt{3}$

3)  $\frac{1}{2}$

4)  $\sqrt{3}$

5)  $\frac{\sqrt{15} - \sqrt{3}}{8}$

6)  $\frac{21}{220}$