

## SUM AND DIFFERENCE IDENTITIES FOR TANGENT

$$\tan(A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$$

$$\tan(A - B) = \frac{\tan A - \tan B}{1 + \tan A \tan B}$$

1. Use the sum or difference identities to find the exact value.

$$\tan \frac{17\pi}{12}$$

2. Find the exact value of each trigonometric function, given:

$$\sin u = \frac{4}{5}, \text{ where } 0 < u < \frac{\pi}{2} \text{ and}$$

$$\cos v = -\frac{12}{13}, \text{ where } \frac{\pi}{2} < v < \pi.$$

a.  $\tan(u + v)$

b.  $\tan(u - v)$