Sum And Difference Identities

Text: 6.2

Last Name	First Name	Date

1 (2 points). Derive a formula for $\sin(\alpha-\beta)$ from the formula

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

2 (2 points). Find the exact value of $\sin(-105^\circ)$, which is the same as $-\sin(60^\circ+45^\circ)$.

3 (2 points). Find the exact value of $\cos(\alpha+\beta)$ if:

$\cos(\alpha)=\frac{4}{7}$ $\sin(\alpha)=\frac{\sqrt{33}}{7}$ $\cos(\beta)=\frac{3}{5}$ $\sin(\beta)=\frac{4}{5}$

4 (2 points). Find the exact value of $\sin(\alpha - \beta)$ if angle α has the point $(-4, 1)$ on its terminal side, and angle β has the point $(1, -2)$ on its terminal side.

5 (2 points). Find the exact value of $\cos(\alpha - \beta)$ if angle α is in the 3rd quadrant, angle β is in the 1st quadrant, and:

$$\cos(\alpha) = -\frac{2}{5} \qquad \sin(\beta) = \frac{\sqrt{5}}{6}$$