$$
\begin{gathered}
5-7-14 \\
3^{r=} T \cdot 1 g \\
\cos (\alpha \pm B)=\cos \alpha \cdot \cos B \mp \sin \alpha \cdot \sin B \\
\sin (\alpha \pm B)=\sin \alpha \cos B \pm \sin B \cdot \cos \alpha
\end{gathered}
$$

(1) If $\tan \alpha=\frac{12}{35}$, and $\cos B=\frac{3}{5}$ find $\sin (\alpha+\beta)$
$\alpha$


$$
\begin{gathered}
12^{2}+35^{2}=c^{2} \\
c=37
\end{gathered}
$$

$$
\begin{aligned}
\sin (\alpha+B)= & \sin \alpha \cdot \cos B+\sin B \cdot \cos \alpha \\
\downarrow & \downarrow \\
& \frac{12}{37} \cdot \frac{3}{5}+\frac{4}{5} \cdot \frac{35}{37} \\
& \frac{36}{185}+\frac{140}{185} \\
& \frac{176}{185}
\end{aligned}
$$



If $\sin \alpha=\frac{7}{25}$ and $\sin \beta=\frac{12}{13}$, find $\cos (\alpha-\beta)$
$\infty$


$$
7^{2}+b^{2}=25^{2}
$$

$$
\cos (\alpha-\beta)=\cos \alpha \cdot \cos B+\sin _{\downarrow} \alpha \cdot \sin B
$$

$$
\frac{24}{25} \frac{5}{13}+\frac{7}{25} \cdot \frac{12}{13}
$$

$$
\frac{120}{325}+\frac{84}{325}
$$

$$
\frac{204}{325}
$$

(3) If $\csc \alpha=\frac{13}{5}$ and $t \sin \beta=\frac{35}{12}$ find $\sin (\alpha+\beta)$ $\infty$


$$
12^{2}+35^{2}=c^{2}
$$

$$
\begin{aligned}
\sin (\alpha+B)= & \sin \alpha \cdot \cos \beta+\sin \beta \cdot \cos \alpha \\
& \frac{5}{13} \cdot \frac{12}{37}+\frac{35}{37} \cdot \frac{12}{13} \\
& \frac{60}{481}+\frac{420}{481} \\
& \frac{480}{481}
\end{aligned}
$$

5-7-14
$4^{2-}$ Trig
If $\tan \alpha=\frac{12}{35}$ and $\cos \beta=\frac{3}{5}$,
find $\sin (\alpha+\beta)$.


$$
\begin{gathered}
12^{2}+3 s^{2}=c^{2} \\
c=37
\end{gathered}
$$



$$
\begin{aligned}
\sin (\alpha+\beta)= & \sin \alpha \cdot \cos \beta+\sin \beta \cdot \cos \alpha \\
& \frac{12}{37} \cdot \frac{3}{5}+\frac{4}{5} \cdot \frac{35}{37} \\
& \frac{36}{185}+\frac{140}{185} \\
& \frac{176}{185}
\end{aligned}
$$

(2) If $\sin \alpha=\frac{7}{25}$ and $\sin \beta=\frac{12}{13}$, find $\cos (\alpha+\beta)$


$$
\begin{aligned}
\cos (\alpha+B)= & \cos \alpha \cdot \cos B-\sin \alpha \cdot \sin B \\
& \frac{\downarrow}{25} \cdot \frac{5}{13}-\frac{7}{25} \cdot \frac{12}{13} \\
& \frac{120}{325}-\frac{84}{325} \\
& \frac{36}{325}
\end{aligned}
$$

If $\csc \alpha=\frac{13}{5}$ and $t$ in $\beta \cdot \frac{4}{3}$,
find $\cos (\alpha-\beta)$


$$
\begin{aligned}
& \cos (\alpha-\beta)= \cos \alpha \cdot \cos \beta+\sin \alpha \cdot \sin \beta \\
& \frac{1}{12} \cdot \frac{3}{5}+\frac{5}{13} \frac{4}{5} \\
& \frac{36}{65}+\frac{20}{65} \\
& \frac{56}{65}
\end{aligned}
$$

