Razones trigonométricas del ángulo diferencia

Seno

$$\operatorname{sen}(\alpha-\beta)=\operatorname{sen}(\alpha+(-\beta))=\operatorname{sen}\alpha\cos(-\beta)+\cos\alpha\operatorname{sen}(-\beta)=\operatorname{sen}\alpha\cos\beta-\cos\alpha\operatorname{sen}\beta$$

C.Q.D.

Coseno

$$\cos(\alpha-\beta)=\cos(\alpha+(-\beta))=\cos\alpha\cos(-\beta)-\operatorname{sen}\alpha\operatorname{sen}(-\beta)==\cos\alpha\cos\beta+\operatorname{sen}\alpha\operatorname{sen}\beta$$

C.Q.D.

Tangente

$$\operatorname{tg}(\alpha-\beta)=\operatorname{tg}(\alpha+(-\beta))=\frac{\operatorname{tg}\alpha+\operatorname{tg}(-\beta)}{1-\operatorname{tg}\alpha\operatorname{tg}(-\beta)}=\frac{\operatorname{tg}\alpha-\operatorname{tg}\beta}{1+\operatorname{tg}\alpha\operatorname{tg}\beta}$$

C.Q.D.