Assignment.

If $\sin\alpha = \frac{8}{17}$ and $\tan\beta = \frac{5}{12}$

1 find (i) $\sin(\alpha-\beta)$ (ii) $\cos(\alpha-\beta)$
(iii) $\tan(\alpha-\beta)$

2 If $\sin\theta = \frac{4}{5}$

(i) Evaluate : $\dfrac{5\cos\theta + 4\operatorname{cosec}\theta + 3\tan\theta}{4\cot\theta + 3\sec\theta + 5\sin\theta}$.

(ii) Show that

$$\sin(45^\circ+x) - \sin(45^\circ-x) = \sqrt{2}\sin x$$

3 Prove the following Identities.

(i) $\sin^2\theta \cot\theta \sec\theta = \sin\theta$

(ii) $(\cot\theta + \operatorname{cosec}\theta)^2 = \dfrac{1+\cos\theta}{1-\cos\theta}$

(iii) $\sqrt{\dfrac{1-\cos 2x}{1+\cos 2x}} = \tan x$.