

11 - احسب $\sin \alpha$ و $\cos \alpha$:

$$\frac{\sin \alpha}{\cos \alpha} = \frac{5}{3} \text{ يعني ان } \tan \alpha = \frac{5}{3}$$

$$\frac{\sin \alpha}{5} = \frac{\cos \alpha}{3} \text{ يعني ان}$$

$$\left(\frac{\sin \alpha}{5}\right)^2 = \left(\frac{\cos \alpha}{3}\right)^2 \text{ يعني ان}$$

$$\frac{\sin^2 \alpha}{25} = \frac{\cos^2 \alpha}{9} \text{ يعني ان}$$

وحسب خاصية التماسب لدينا

$$\frac{\sin^2 \alpha}{25} = \frac{\cos^2 \alpha}{9} = \frac{\sin^2 \alpha + \cos^2 \alpha}{25 + 9} = \frac{1}{34}$$

$$\sin^2 \alpha = \frac{25}{34} \text{ يعني ان } \frac{\sin^2 \alpha}{25} = \frac{1}{34} \text{ إذن}$$

$$\sin \alpha = \sqrt{\frac{25}{34}} = \frac{5}{\sqrt{34}} \text{ يعني ان}$$

$$\sin \alpha = \frac{5\sqrt{34}}{34} \text{ يعني ان}$$

$$\cos^2 \alpha = \frac{9}{34} \text{ يعني ان } \frac{\cos^2 \alpha}{9} = \frac{1}{34} \text{ و}$$

$$\cos \alpha = \sqrt{\frac{9}{34}} = \frac{3}{\sqrt{34}} \text{ يعني ان}$$

$$\cos \alpha = \frac{3\sqrt{34}}{34} \text{ يعني ان}$$

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