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# AI1110 Assignment 1

# AI21BTECH11001

# ICSE Grade 10 2014 paper

#### Question 3:

(a) Without using trigonometric tables, evaluate  $\sin^2 34^\circ + \sin^2 56^\circ + 2 \tan 18^\circ \tan 72^\circ - \cot^2 30^\circ$  [3]

### **Solution:**

$$sin^234^\circ + sin^256^\circ + 2tan18^\circ tan72^\circ - cot^230^\circ$$

$$sin^{2}34^{\circ} + sin^{2}(90^{\circ} - 34^{\circ}) + 2tan18^{\circ}tan(90^{\circ} - 18^{\circ}) \\ -cot^{2}30^{\circ}$$

$$sin^234^\circ + cos^234^\circ + 2tan18^\circ cot18^\circ - cot^230^\circ$$

$$1 + 2tan18^{\circ} \frac{1}{tan18^{\circ}} - (\sqrt{3})^2$$

$$1 + 2 - 3$$

0