Core Mathematics C12(GCE)

Practice Question 17

Standard A

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Critical thinking is the key to solve real world problems.

Children must be taught how to think, not what to think.

A great teacher will be creating students to do new things through critical thinking, Not simply repeating what other generations have done before. We do not need another Albert Einstein or Isaac Newton.... we need a person better than them.

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Trigonometry

Question:

Given that, $\tan 75° = 2 + \sqrt{3}$

without using angle sum-difference identities and a calculator,

Find, $\tan 15°$

(3 marks)

Golden Rules

- $\tan\theta = \frac{\sin\theta}{\cos\theta}$
- $\sin^2\theta + \cos^2\theta = 1$
- $\sin\theta = \cos(90° - \theta)$
- $\cos\theta = \sin(90° - \theta)$

$$\sin 0° = \frac{\sqrt{0}}{2} \qquad \cos 0° = \frac{\sqrt{4}}{2}$$

$$\sin 30° = \frac{\sqrt{1}}{2} \qquad \cos 30° = \frac{\sqrt{3}}{2}$$

$$\sin 45° = \frac{\sqrt{2}}{2} \qquad \cos 45° = \frac{\sqrt{2}}{2}$$

$$\sin 60° = \frac{\sqrt{3}}{2} \qquad \cos 60° = \frac{\sqrt{1}}{2}$$

$$\sin 90° = \frac{\sqrt{4}}{2} \qquad \cos 90° = \frac{\sqrt{0}}{2}$$

Traditonal or Online classes

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