

อัตราส่วนตรีโกณมิติ

ฟังก์ชัน (cosecant) หรือ cosec A หรือ csc A

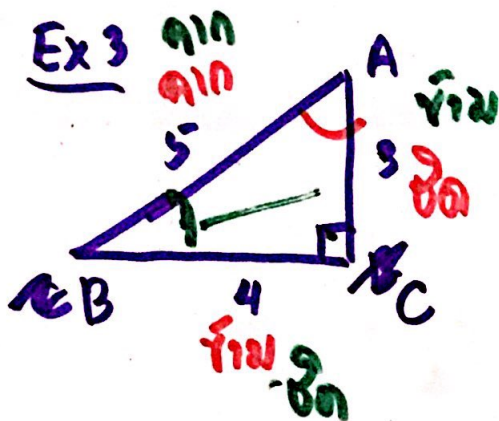
$$\text{cosec } A = \frac{1}{\sin A}$$

ฟังก์ชัน (secant) หรือ sec A

$$\text{sec } A = \frac{1}{\cos A}$$

ฟังก์ชัน (cotangent) หรือ cot A

$$\text{cot } A = \frac{1}{\tan A}$$



$$\sin A = \frac{4}{5}$$

$$\tan A = \frac{4}{3}$$

$$\sec A = \frac{5}{3}$$

$$\sin B = \frac{3}{5}$$

$$\tan B = \frac{3}{4}$$

$$\sec B = \frac{5}{4}$$

$$\cos A = \frac{3}{5}$$

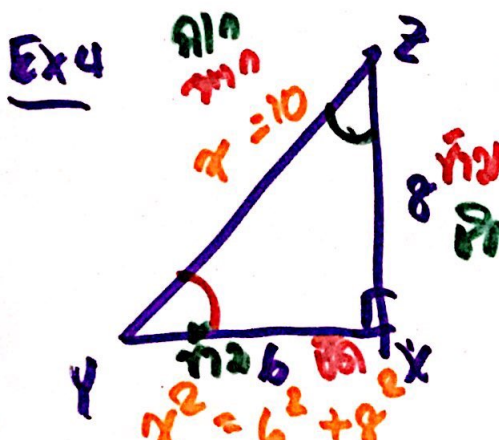
$$\text{cosec } A = \frac{5}{4}$$

$$\cot A = \frac{3}{4}$$

$$\cos B = \frac{4}{5}$$

$$\text{cosec } B = \frac{5}{3}$$

$$\cot B = \frac{4}{3}$$



$$\sin Y = \frac{8}{10} = \frac{4}{5} \quad \cos Y = \frac{6}{10} = \frac{3}{5}$$

$$\tan Y = \frac{8}{6} = \frac{4}{3} \quad \text{cosec } Y = \frac{5}{4}$$

$$\sec Y = \frac{5}{3} \quad \cot Y = \frac{3}{4}$$

$$\sin Z = \frac{6}{10} = \frac{3}{5} \quad \cos Z = \frac{8}{10} = \frac{4}{5}$$

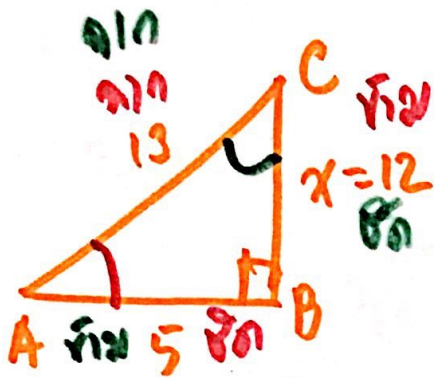
$$\tan Z = \frac{6}{8} = \frac{3}{4} \quad \text{cosec } Z = \frac{5}{3}$$

$$\sec Z = \frac{5}{4} \quad \cot Z = \frac{4}{3}$$

$$\begin{aligned} x^2 &= 6^2 + 8^2 \\ &= 36 + 64 \\ &= 100 \\ x &= 10 \end{aligned}$$

EXS รูป $\triangle ABC$ เป็น \triangle ขนานกึ่งมุม B เป็นมุมฉาก

ที่ $AB=5, AC=13$ จงหา



$$13^2 = x^2 + 5^2$$

$$169 = x^2 + 25$$

$$144 = x^2$$

$x=12$ ~~$x=12$~~

$\sin A = 12/13$

$\tan A = 12/5$

$\sec A = 13/5$

$\sin C = 5/13$

$\tan C = 5/12$

$\sec C = 13/12$

$\cos A = 5/13$

$\operatorname{cosec} A = 13/12$

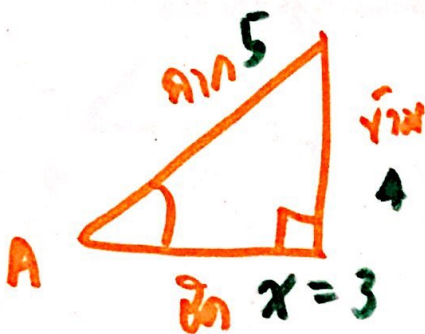
$\cot A = 5/12$

$\cos C = 12/13$

$\operatorname{cosec} C = 13/5$

$\cot C = 12/5$

EXI กำหนดให้ $\sin A = 4/5$ จงหา $\operatorname{cosec} A, \cos A$ และ $\tan A$



$$5^2 = x^2 + 4^2$$

$$25 = x^2 + 16$$

$$9 = x^2$$

$$x = 3, \text{ ~~} x = -3 \text{ }~~$$

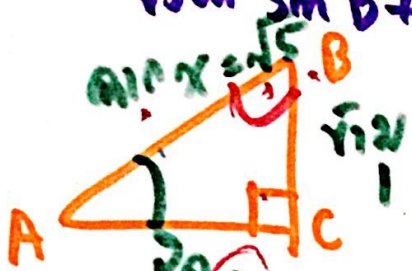
$\operatorname{cosec} A = 5/4$

$\cos A = 3/5 \quad \tan A = 4/3$

Ex7 តំណាង ABC ជុំរួម C ជុំរួម $\cot A = 2/1$

រក $\sin B + \cos A$

$$\cot A = 2/1 \Rightarrow \tan A = 1/2$$



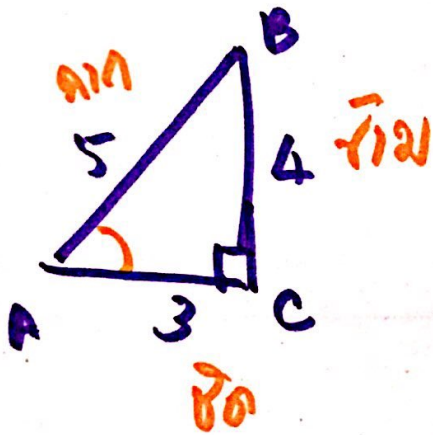
$$\sin B = \frac{2}{\sqrt{5}}$$

$$\cos A = \frac{2}{\sqrt{5}}$$

$$\begin{aligned} x^2 &= 1^2 + 2^2 \\ &= 1 + 4 = 5 \\ x &= \sqrt{5} \end{aligned}$$

$$\sin B + \cos A = \frac{2}{\sqrt{5}} + \frac{2}{\sqrt{5}} = \frac{4}{\sqrt{5}}$$

Ex8 រក $\sin^2 A$, $\cos^2 A$, $\tan^2 A$



$$\sin A = \frac{4}{5}, \cos A = \frac{3}{5}, \tan A = \frac{4}{3}$$

$$\sin^2 A = (\sin A)^2 = \left(\frac{4}{5}\right)^2 = \frac{16}{25}$$

$$\cos^2 A = (\cos A)^2 = \left(\frac{3}{5}\right)^2 = \frac{9}{25}$$

$$\tan^2 A = (\tan A)^2 = \left(\frac{4}{3}\right)^2 = \frac{16}{9}$$

ក្រុមប្រឹក្សា 4-6