Homework Questions...

(35)

$S = r\cdot\theta$

$\frac{10}{180} \quad \frac{\pi}{18}$

$\theta = \frac{\pi}{18}$ $r = 11$

$P = 11 + 11 + 1.92$

23.92 inches (24)

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4.2 Right Triangle Trig

SOH-CAH-TOA

Reciprocals

$\sin\theta = \frac{\text{opposite}}{\text{hypotenuse}}$ $\csc\theta = \frac{\text{hypotenuse}}{\text{opposite}}$

$\cos\theta = \frac{\text{adjacent}}{\text{hypotenuse}}$ $\sec\theta = \frac{\text{hypotenuse}}{\text{adjacent}}$

$\tan\theta = \frac{\text{opposite}}{\text{adjacent}}$ $\cot\theta = \frac{\text{adjacent}}{\text{opposite}}$

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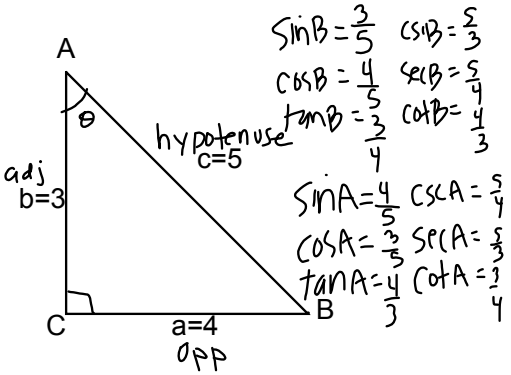

$\sin B = \frac{3}{5}$ $\csc B = \frac{5}{3}$

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

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

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

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

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

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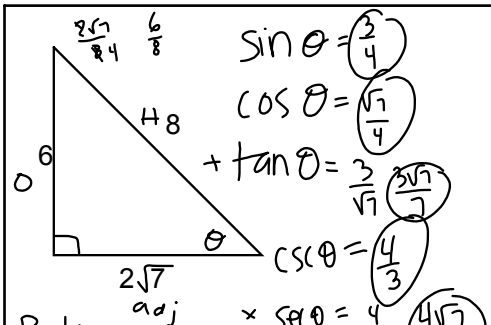

$\sin\theta = \frac{3}{4}$

$\cos\theta = \frac{\sqrt{7}}{4}$

$+\tan\theta = \frac{3}{\sqrt{7}}$ $\frac{3\sqrt{7}}{7}$

$\csc\theta = \frac{4}{3}$

Rationalize

$\times \sec\theta = \frac{4}{\sqrt{7}}$ $\frac{4\sqrt{7}}{7}$

$\frac{3\sqrt{7}}{\sqrt{7}\cdot\sqrt{7}}$ $\frac{3\sqrt{7}}{7}$ $\cot\theta = \frac{\sqrt{7}}{3}$

$\frac{4}{\sqrt{7}\cdot\sqrt{7}}$ $\frac{4\sqrt{7}}{7}$

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Pick an angle

$\sin\theta = \frac{3}{7}$ $\frac{\text{opp}}{\text{hyp}}$

c is the hypotenuse

$a^2 + b^2 = c^2$

$3^2 + b^2 = 7^2$

$-3^2 \quad -3^2$

$\sqrt{b^2} = \sqrt{40}$

$4 \cdot 10$

$2 \cdot 5$

$b = 2\sqrt{10}$

$\sin\theta = \frac{3}{7}$ $\csc\theta = \frac{7}{3}$

$\cos\theta = \frac{2\sqrt{10}}{7}$ $\sec\theta = \frac{7}{2\sqrt{10}}$ $\frac{7\sqrt{10}}{70}$

$\tan\theta = \frac{3}{2\sqrt{10}}$ $\cot\theta = \frac{2\sqrt{10}}{3}$

$\frac{3\sqrt{10}}{20}$

$\frac{3}{2\sqrt{10}\cdot\sqrt{10}}$ $\frac{3\sqrt{10}}{2\cdot 10}$ $\frac{3\sqrt{10}}{20}$

$\frac{7}{2\sqrt{10}\cdot\sqrt{10}}$ $\frac{7\sqrt{10}}{20}$

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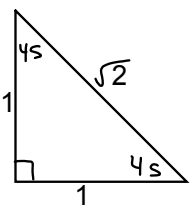
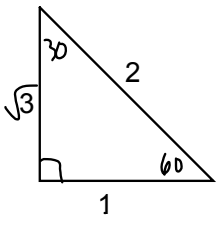
Special Right Triangles



45-45-90



30-60-90

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$\sin \frac{\pi}{3}$

Same as $\sin 60 = \frac{\sqrt{3}}{2}$

$\frac{\pi}{3} = 60^\circ$

$\frac{\pi}{2} = 90^\circ$

$\frac{\pi}{6} = 30^\circ$

$\frac{\pi}{4} = 45^\circ$

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$\csc \frac{\pi}{6}$ reciprocal of $\frac{\pi}{6}$

$\frac{1}{\sin \frac{\pi}{6}}$

$\csc 30 \quad \frac{hyp}{opp} \quad \frac{2}{1} = 2$

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Solve the Triangle:

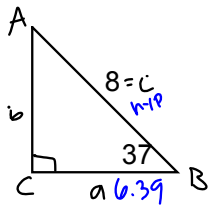
Solve for all three angles and all three sides

A= 53° a= 6.39

B= 37° b= 4.81

C= 90° c= 8

180-37-90



$\cos 37^\circ = \frac{a}{8}$

$8 \cdot \cos 37 = a$

$6.39 = a$

$\sin 37 = \frac{b}{8}$

$8 \cdot \sin 37$

$4.81 = b$

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$\csc \frac{\pi}{15}$

$\frac{1}{\sin \frac{\pi}{15}} \approx 4.810$

Since you are typing π you need to be in radian mode. If you type degrees you need to be in degree mode.

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$\cot 15^\circ$

$\frac{1}{\tan 15^\circ} \approx 3.732$

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Solving for an angle:

Use the inverse $\sin^{-1}$ to solve for an angle

$\sin \theta = \frac{1}{2}$

$\sin^{-1} \sin \theta = \sin^{-1} \frac{1}{2} = 30^\circ$ or $\frac{\pi}{6}$

2nd sin (1 ÷ 2)

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3-48 multiples of 3

3, 6, 9, 12, 15, 18, 21, . . .

56, 61, 62, 64, 65

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