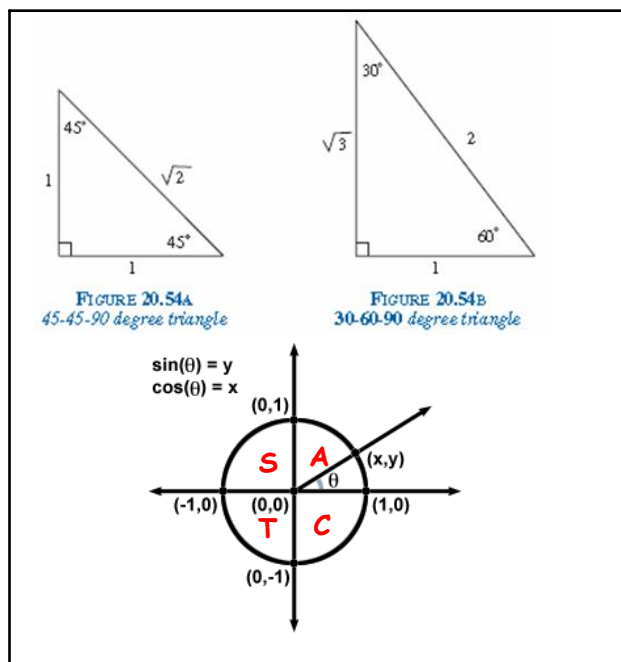


Evaluating Trig Expressions Without a Calculator.



Dec 21-2:00 PM

Dec 21-1:59 PM

$\sin 225^\circ$

$\cos 240^\circ$

Dec 12-1:34 PM

Dec 12-1:34 PM

$$\sin -930^\circ$$

Dec 12-1:34 PM

$$\cos 2130^\circ$$

Dec 12-1:35 PM

Example 1: Evaluate: $\sin 60^\circ + \cos 60^\circ$

Feb 16-8:16 AM

Example 2: Evaluate: $\sin 45^\circ \cos 30^\circ - \sin 90^\circ$

Jan 10-10:20 AM

Example 3: Evaluate: $\cos 210^\circ \sin 240^\circ - \sin 135^\circ$

Example 4: Evaluate: $\sin (-120^\circ) + \sin 30^\circ$

Jan 10-10:25 AM

Jan 10-10:33 AM

5. $\cos 45^\circ \cos 60^\circ - \sin 90^\circ \cos 120^\circ$

6. $\cos 90^\circ + 5 \sin 270^\circ$

Jan 10-10:37 AM

Feb 16-8:36 AM

$$7. \quad 4\sin 45^\circ - 3\cos 45^\circ$$

Feb 16-8:38 AM

$$8. \quad \cos 300^\circ + 5 \sin 210^\circ$$

Feb 16-8:42 AM

$$9. \quad -2\sin 150^\circ + 3\cos 60^\circ$$

Feb 16-8:48 AM

$$10. \quad 3\cos 210^\circ - 2\sin 240^\circ$$

Feb 16-8:52 AM

$$\sin 240^\circ \cos 135^\circ$$

$$\begin{array}{cc} Q 3 & Q 2 \\ \text{ref } \angle 60^\circ & \text{ref } \angle 45^\circ \end{array}$$

$$\left(-\frac{\sqrt{3}}{2}\right)\left(-\frac{\sqrt{2}}{2}\right)$$

$$\frac{\sqrt{6}}{4}$$

Feb 16-2:17 PM

$$11. \sin 330^\circ + \cos 210^\circ$$

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$$\frac{\sqrt{3}}{2} = 0.8660$$

$$\frac{\sqrt{2}}{2} = 0.7071$$

$$\frac{1}{2} = 0.5$$

$$12. 5\sin 225^\circ + 2\cos 315^\circ$$

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$$13. 5\cos 120^\circ + 4\sin 210^\circ$$

$$\textcircled{11} \frac{2\sin 120^\circ}{\cos 210^\circ}$$

$$\frac{2\left(\frac{\sqrt{3}}{2}\right)}{\left(-\frac{\sqrt{3}}{2}\right)} = -2$$

Q2 ref 60°
Q3 ref 30°

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Feb 16-8:57 AM

$$5\cos 120^\circ + 4\sin 210^\circ$$

Q2 ref 60° Q3 ref 30°

$$5\left(-\frac{1}{2}\right) + 4\left(-\frac{1}{2}\right)$$

$$-\frac{5}{2} + -2$$

$$= -\frac{9}{2}$$

$$\textcircled{12} \frac{\cos 150^\circ}{\sin(-45^\circ)}$$

Feb 17-9:05 AM

Dec 12-1:32 PM

$$\begin{aligned}
 & \textcircled{12} \quad \frac{\cos 150^\circ}{\sin(-45^\circ)} \quad \begin{array}{l} \text{Q2 Ref } 30^\circ \\ \text{Q4 Ref } 45^\circ \end{array} \\
 & = \frac{-\frac{\sqrt{3}}{2}}{-\frac{\sqrt{2}}{2}} = -\frac{\sqrt{3}}{2} \times -\frac{2}{\sqrt{2}} \\
 & \quad = \frac{2\sqrt{3}}{2\sqrt{2}} \\
 & \quad = \frac{\sqrt{3}}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} \\
 & \quad = \frac{\sqrt{6}}{2}
 \end{aligned}$$

Feb 16-8:59 AM

$$\sin^2(300^\circ) + \cos^2(-210^\circ)$$

Dec 12-1:32 PM

$$\begin{aligned}
 & \sin^2(300^\circ) + \cos^2(-210^\circ) \\
 & \left(\underset{\substack{\text{Q4} \\ \text{ref } 60^\circ}}{\sin 300^\circ} \right)^2 + \left(\underset{\substack{\text{Q3} \\ \text{ref } 30^\circ}}{\cos -210^\circ} \right)^2 \\
 & \left(-\frac{\sqrt{3}}{2} \right)^2 + \left(-\frac{\sqrt{3}}{2} \right)^2 \\
 & \frac{\sqrt{9}}{4} + \frac{\sqrt{9}}{4} \\
 & \frac{3}{4} + \frac{3}{4} \\
 & = \frac{6}{4} = \frac{3}{2}
 \end{aligned}$$

Feb 17-9:02 AM

$$\frac{2 \sin 120^\circ}{\cos 210^\circ}$$

Dec 12-1:32 PM

$$\frac{2 \sin 120^\circ}{\cos 210^\circ} \quad \begin{array}{l} Q 2 \\ 9 3 \end{array} \quad \begin{array}{l} \text{Ref } 60^\circ \\ \text{Ref } 30^\circ \end{array}$$

$$\frac{2 \left(\frac{\sqrt{3}}{2} \right)}{\left(-\frac{\sqrt{3}}{2} \right)}$$

$$= \frac{2}{-1} = -2$$

Feb 17-9:02 AM

$$\frac{\cos 150^\circ}{\sin (-45^\circ)}$$

Dec 12-1:32 PM

$$\frac{\cos 150^\circ}{\sin (-45^\circ)} \quad \begin{array}{l} Q 2 \\ Q 4 \end{array} \quad \begin{array}{l} \text{Ref } 30^\circ \\ \text{Ref } 45^\circ \end{array}$$

$$\frac{-\frac{\sqrt{3}}{2}}{-\frac{\sqrt{2}}{2}} = \frac{-\sqrt{3}}{2} \times \frac{2}{-\sqrt{2}}$$

$$= \frac{-\sqrt{3}}{-\sqrt{2}}$$

$$= \frac{\sqrt{3}}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}}$$

$$= \frac{\sqrt{6}}{\sqrt{4}} = \frac{\sqrt{6}}{2}$$

Feb 17-9:03 AM

$$\cos 300^\circ \cdot \sin 225^\circ - \cos^2 (20^\circ)$$

Dec 12-1:31 PM

$$\begin{aligned} & \cos 300^\circ \cdot \sin 225^\circ - \cos^2(120^\circ) \\ & \left(\frac{1}{2}\right) \left(\frac{-\sqrt{2}}{2}\right) - \left(-\frac{1}{2}\right)^2 \\ & \frac{-\sqrt{2}}{4} - \frac{1}{4} \\ & \frac{-\sqrt{2}-1}{4} \end{aligned}$$

Feb 17-9:03 AM

$$\frac{\sin 45^\circ}{\cos 60^\circ}$$

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$$\frac{2 \sin 30^\circ}{\sin 150^\circ}$$

Dec 12-1:30 PM

$$\frac{-3 \sin 120^\circ}{\cos 240^\circ}$$

Dec 12-1:30 PM

$$\cos^2 150^\circ$$

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$$\sin^2 180 + 3 \cos(-45^\circ)$$

Dec 12-1:30 PM

$$\frac{\cos 30^\circ}{\sin 45^\circ} + \frac{\sin 30^\circ}{\cos 45^\circ}$$

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$$\frac{\cos(-180^\circ)}{\sin^2(270^\circ)}$$

Dec 12-1:30 PM

$$\frac{\sin 315^\circ - \cos(-225^\circ)}{\sin 30^\circ - \cos 150^\circ}$$

$$\sin 210^\circ \cdot \cos(-300^\circ) + \cos 0^\circ \cdot \sin 135^\circ$$

Dec 12-1:30 PM

Dec 12-1:30 PM

$$\frac{\sin 90^\circ - 2 \cos 240^\circ}{\sin 420^\circ}$$

2.) Evaluate each of the trigonometric expressions, giving exact answers in lowest terms.

a.) $\frac{\sin 45^\circ}{\cos 60^\circ}$

b.) $\frac{2 \sin 30^\circ}{\sin 150^\circ}$

c.) $\frac{-3 \sin 120^\circ}{\cos 240^\circ}$

d.) $\cos^2 150^\circ$

e.) $\sin^2 180^\circ + 3 \cos(-45^\circ)$

f.) $\frac{\cos 30^\circ}{\sin 45^\circ} + \frac{\sin 30^\circ}{\cos 45^\circ}$

g.) $\frac{\cos(-180^\circ)}{\sin^2(270^\circ)}$

h.) $\frac{\sin 315^\circ}{\sin 30^\circ} - \frac{\cos(-225^\circ)}{\cos 150^\circ}$

i.) $\sin 210^\circ \cdot \cos(-300^\circ) + \cos 0^\circ \cdot \sin 135^\circ$

j.) $\frac{\sin 90^\circ - 2 \cos 240^\circ}{\sin 420^\circ}$

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Dec 12-1:08 PM

1) Simplify each of the following. Rationalize the denominator if necessary.
Leave answers in simplest radical form.

a.) $\frac{1}{\sqrt{3}}$

b.) $\frac{2}{\sqrt{5}}$

c.) $\frac{\sqrt{3}}{\sqrt{6}}$

d.) $\frac{6}{\sqrt{8}}$

e.) $\frac{1}{\frac{\sqrt{2}}{2}}$

f.) $\frac{\sqrt{3}}{\frac{1}{\sqrt{3}}}$

g.) $\frac{1}{\frac{\sqrt{2}}{2}}$

h.) $\frac{-4}{\frac{\sqrt{3}}{3}}$

Dec 12-1:10 PM