

Outcome 3 - Exact values

Bronze examples

Examples...

Angle	0°	30°	45°	60°	90°
sin x	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1
cos x	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0
tan x	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	∞

$\sin 45^\circ = \frac{1}{\sqrt{2}}$ $\cos 60^\circ = \frac{1}{2}$
 $\tan 0^\circ = 0$ $\sin 90^\circ = 1$

Silver examples

Examples...

Angle	0°	30°	45°	60°	90°
sin x	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1
cos x	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0
tan x	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	∞

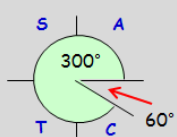
$\sin^{-1}\left(\frac{\sqrt{3}}{2}\right) = 60^\circ$ $\cos^{-1}\left(\frac{1}{\sqrt{2}}\right) = 45^\circ$
 $\tan^{-1}(1) = 45^\circ$ $\sin^{-1}(0) = 0^\circ$

Gold examples

Examples...

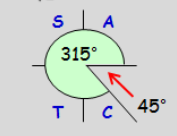
$\cos 300^\circ = \cos 300^\circ = \frac{1}{2}$

****Cos is POSITIVE in the 'C' quadrant****



$\sin 315^\circ = -\sin 45^\circ = -\frac{1}{\sqrt{2}}$

****Sin is NEGATIVE in the 'C' quadrant****



Bronze Questions

Write down the following exact values...

1

$\sin 30^\circ$

2

$\cos 0^\circ$

3

$\tan 45^\circ$

4

$\sin 0^\circ$

5

$\cos 30^\circ$

6

$\tan 60^\circ$

7

$\cos 90^\circ$

8

$\sin 60^\circ$

Silver Questions

Write down the following exact values...

1

$\cos^{-1}\left(\frac{1}{2}\right)$

2

$\sin^{-1}\left(\frac{1}{\sqrt{2}}\right)$

3

$\tan^{-1}(\sqrt{3})$

4

$\cos^{-1}\left(\frac{\sqrt{3}}{2}\right)$

5

$\tan^{-1}(0)$

6

$\cos^{-1}(0)$

7

$\sin^{-1}(1)$

8

$\tan^{-1}\left(\frac{1}{\sqrt{3}}\right)$

Gold Questions

Calculate the following exact values...

1

$\sin 135^\circ$

2

$\tan 210^\circ$

3

$\sin 150^\circ$

4

$\cos 315^\circ$

5

$\tan 120^\circ$

6

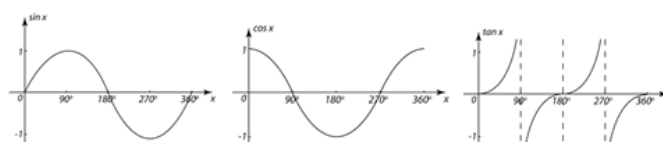
$\sin 300^\circ$

7

$\sin 210^\circ$

8

$\tan 150^\circ$



Bronze Answers

- | | |
|-----------------|-----------------|
| 1. $1/2$ | 2. 1 |
| 3. 1 | 4. 0 |
| 5. $\sqrt{3}/2$ | 6. $\sqrt{3}$ |
| 7. 0 | 8. $\sqrt{3}/2$ |

Silver Answers

- | | |
|---------------|---------------|
| 1. 60° | 2. 45° |
| 3. 60° | 4. 30° |
| 5. 0° | 6. 90° |
| 7. 90° | 8. 30° |

Gold Answers

- | | |
|-----------------|------------------|
| 1. $1/\sqrt{2}$ | 2. $1/\sqrt{3}$ |
| 3. $1/2$ | 4. $1/\sqrt{2}$ |
| 5. $-\sqrt{3}$ | 6. $-\sqrt{3}/2$ |
| 7. $-1/2$ | 8. $-1/\sqrt{3}$ |