U5D6 **Special Angles in Standard Position** Warm Up: Skill Reflection #4

Find exact values for the following. DO NOT USE YOUR CALCULATOR!

1. a) sin 90° b) cos 270° c) tan 360° d) sin 180° e) tan(-180°)

   f) sin(-180°) g) sin(-270°) h) cos(-360°) i) cos(-180°) j) tan 90°

2. a) Draw a sketch of 300° in standard position.
   b) Calculate the primary trigonometric ratios for 300°.

3. a) Draw a sketch of -225° in standard position.
   b) Calculate the primary trigonometric ratios for -225°.

4. Calculate each of the following.

   a) sin(-60°) b) sin300°
   c) What do you notice about your answers. Give a reason for your answer.

5. Calculate each of the following.

   a) cos225° b) sin(120°) c) tan(-150°) d) tan135° e) cos(-30°)

   f) tan330° g) cos(-45°) h) tan(-225°) i) sin(240°) j) sin(210°)

6. Calculate these too.

   a) tan390° b) cos(-480°) c) tan510° d) sin(-495°) e) tan585°
   f) cos780°

ANSWERS

1. a) 1, b) 0, c) 0, d) 0, e) 0, f) 0, g) 1, h) 1, i) -1, j) und

2. $\sin 300° = -\frac{\sqrt{3}}{2}, \cos 300° = \frac{1}{2}, \tan 300° = -\sqrt{3}$

3. $\sin(-225°) = \frac{1}{\sqrt{2}}, \cos(-225°) = -\frac{1}{\sqrt{2}}, \tan(-225°) = -1$

4. $-\frac{\sqrt{3}}{2}$, coterminal angles

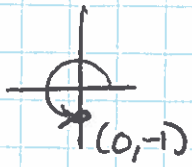
5. a) $-\frac{1}{\sqrt{2}}, b) \frac{\sqrt{3}}{2}, c) \frac{1}{\sqrt{3}}, d) -1$ e) $\frac{\sqrt{3}}{2}$ f) $-\frac{1}{\sqrt{3}}$ g) $\frac{1}{\sqrt{2}}$ h) -1 i) $-\frac{\sqrt{3}}{2}$, j) $-\frac{1}{2}$

6. a) $\frac{1}{\sqrt{3}}, b) -\frac{1}{2}, c) -\frac{1}{\sqrt{3}}, d) -\frac{1}{\sqrt{2}}$, e) 1, f) $\frac{1}{2}$

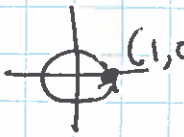
U5D6

1a) 

$\sin 90^\circ = 1$

b) 

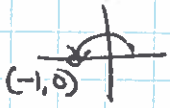
$\cos 270^\circ = 0$

c) 

$\tan 360^\circ = \frac{0}{1}$

$\tan 360^\circ = 0$

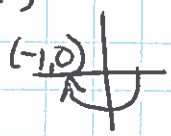
d) $\sin 180^\circ = 0$



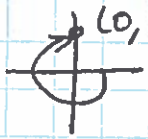
e) $\tan(-180^\circ) = \frac{0}{-1}$

$\tan(-180^\circ) = 0$

f) $\sin(-180^\circ) = 0$

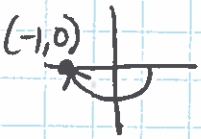


g) $\sin(-270^\circ) = 1$



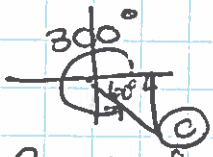
h) $\cos(-360^\circ) = 1$

i) $\cos(-180^\circ) = -1$



j) $\tan 90^\circ = \frac{1}{0}$

$\tan 90^\circ$ is undefined.

2a) 

$\beta = 60^\circ$

b) $\sin 300^\circ = -\sin 60^\circ = -\frac{\sqrt{3}}{2}$

$\cos 300^\circ = \cos 60^\circ = \frac{1}{2}$

$\tan 300^\circ = -\tan 60^\circ = -\sqrt{3}$

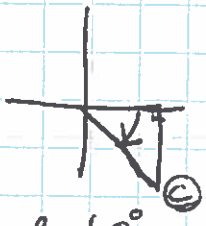
3a) 

$\beta = 45^\circ$

b) $\sin 225^\circ = \sin 45^\circ = \frac{1}{\sqrt{2}}$

$\cos 225^\circ = -\cos 45^\circ = -\frac{1}{\sqrt{2}}$

$\tan 225^\circ = -\tan 45^\circ = -1$

4. a) 

$\beta = 60^\circ$

$\sin(-60^\circ) = -\sin 60^\circ = -\frac{\sqrt{3}}{2}$

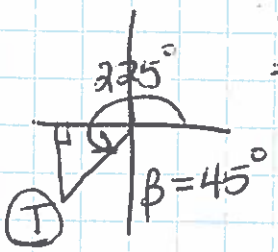
b) 

$\beta = 60^\circ$

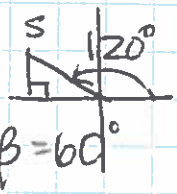
$\sin 300^\circ = -\sin 60^\circ = -\frac{\sqrt{3}}{2}$

c) $\sin(-60^\circ) = \sin 300^\circ$ (when 2 angles line up at the same place on the cartesian plane, their terminal arms are in exactly the same place.

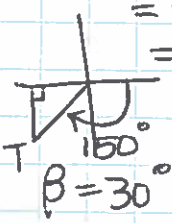
5. a) $\cos 225^\circ$
$= -\cos 45^\circ$ ✓
$= -\frac{1}{\sqrt{2}}$



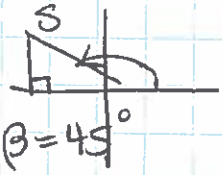
b) $\sin 120^\circ$
$= \sin 60^\circ$
$= \frac{\sqrt{3}}{2}$



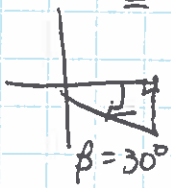
c) $\tan(-150^\circ)$
$= \tan 30^\circ$
$= \frac{1}{\sqrt{3}}$



d) $\tan 135^\circ$
$= -\tan 45^\circ$
$= -1$

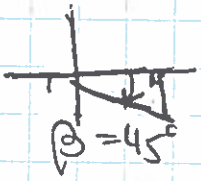


e) $\cos(-30^\circ)$
$= \cos 330^\circ$
$= \cos 30^\circ$
$= \frac{\sqrt{3}}{2}$

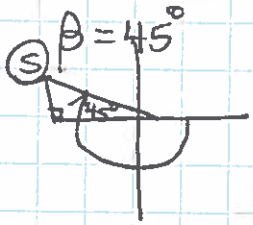


f) $\tan 330^\circ$
$= -\tan 30^\circ$
$= -\frac{1}{\sqrt{3}}$

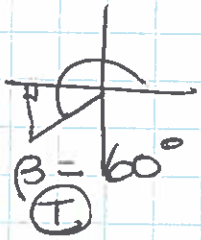
g) $\cos(-45^\circ)$
$= \cos 45^\circ$
$= \frac{1}{\sqrt{2}}$



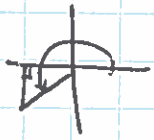
h) $\tan(-225^\circ)$
$= -\tan 45^\circ$
$= -1$



i) $\sin 240^\circ$
$= -\sin 60^\circ$
$= -\frac{\sqrt{3}}{2}$

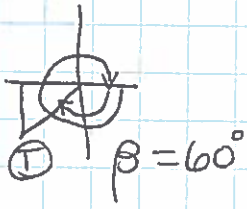


j) $\sin 210^\circ$
$= -\sin 30^\circ$
$= -\frac{1}{2}$

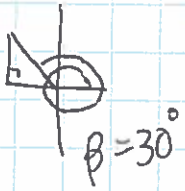


6. a) $\tan 390^\circ$
$= \tan 30^\circ$
$= \frac{1}{\sqrt{3}}$

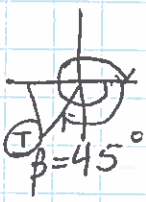
b) $\cos(-480^\circ)$
$= -\cos 60^\circ$
$= -\frac{1}{2}$



c) $\tan 510^\circ$
$= \tan 150^\circ$
$= -\tan 30^\circ$
$= -\frac{1}{\sqrt{3}}$



d) $\sin(-495^\circ)$
$= \sin(-135^\circ)$
$= -\sin 45^\circ$
$= -\frac{1}{\sqrt{2}}$



e) $\tan 585^\circ$
$= \tan 225^\circ$
$= \tan 45^\circ$
$= 1$

f) $\cos 780$
$= \cos 60^\circ = \frac{1}{2}$