Review reference angles

Example 1: Find the reference angle for
a) $2\pi/3$ b) $-7\pi/4$

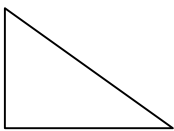Example 2: Find the exact values for
a) csc $(3\pi/4)$ b) tan $(-\pi/3)$

c) cos $(300°)$

Cofunctions

Recall: In a right triangle the two acute angles are complementary; i.e. the sum of their measures is 90°.

Cofunction identities
If A and B are complementary:

sin A = cos B   tan A = cot B   sec A = csc B

Written another way:

sin θ = cos (π/2 – θ)   tan θ = cot (π/2 – θ)   sec θ = csc (π/2 – θ)
cos θ = sin (π/2 – θ)   cot θ = tan (π/2 – θ)   csc θ = sec (π/2 – θ)

Example 3: If sin θ = 4/5 and θ is acute, find the exact value of cos (π/2 – θ).

Review Pythagorean Identities

Example 4: Find the exact value of $\dfrac{\sec 70°}{\csc 20°} + \tan^2 20°$.

Example 5: Select ALL the correct choices, if θ is acute and csc θ = 5/2

a) $\sec^2 θ = 21/25$
b) $\cot^2 θ = 4/21$
c) sec (π/2 – θ) = –2/5
d) none of these is correct

Example 6: Select ALL the correct choices
   a) $\cos(-\pi/6) = \csc(\pi/3)$
   b) $\tan(-\pi/4) = -\cot(\pi/4)$
   c) $\sin(3\pi/4) = \sin(-\pi/4)$
   d) none of these is correct

Example 7: Find the exact value of $\sec 15° + \dfrac{1}{\sin 75°} =$ (there are two possible answers)

Example 8: Select ALL the correct choices

a) $\csc \theta = \dfrac{\sqrt{3}}{2}$

b) $\cos \theta = \dfrac{1}{\sqrt{3}}$

c) $\cot \theta = \dfrac{1}{2}$

d) none of these is correct