Comprehensive Review #5

Topics:
Lesson 52 - Arguments in Trig Equations
Lesson 60 - Factorable Trig Equations
Lesson 84 - Factorable Expressions

[1] $\dfrac{\pi}{6}, \dfrac{5\pi}{6}, \dfrac{7\pi}{6}, \dfrac{11\pi}{6}$

[2] $15°, 165°, 195°, 345°$

[3] $120°$

[4] $30°, 60°, 120°, 150°, 210°, 240°, 300°, 330°$

[5] [B]

[6] [A]

[7] [C]

[8] [B]

$\sin^4 x - 2\sin^2 x + 1 = (\sin^2 x - 1)(\sin^2 x - 1)$
$= (-\cos^2 x)(-\cos^2 x) = \cos^4 x$

[9] _____

$\cos x - \cos x \sin^2 x = (\cos x)(1 - \sin^2 x)$
$= (\cos x)(\cos^2 x) = \cos^3 x$

[10] _____

$$\frac{\sec^2 x - 1}{\cot x} = \frac{\tan^2 x}{\cot x}$$

$$= \frac{\tan^2 x}{\cot x} \cdot \frac{\tan x}{\tan x} = \tan^3 x$$

[11] _____

$$\frac{\sin^3 x - \cos^3 x}{\sin x - \cos x} = \frac{(\sin x - \cos x)(\sin^2 x + \sin x \cdot \cos x + \cos^2 x)}{\sin x - \cos x}$$

$$= (\sin^2 x + \sin x \cdot \cos x + \cos^2 x).$$

[12] $(\sin^2 x + \sin x \cdot \cos x + \cos^2 x) - \sin x \cdot \cos x = \sin^2 x + \cos^2 x = 1$
_____

[13] [C]

[14] [C]

[15] [C]