Comprehensive Review #9

Topics:
Lesson 72 - Law of sines
Lesson 87 - Sum and differene identities
Lesson 90 - Double-angle identities
Lesson 96 - Tirangle area formula

1. Solve triangle ABC given that $A = 52°$, $B = 51°$, and $b = 61$.

2. Solve triangle ABC given that $A = 44°$, $B = 52°$, and $b = 74$.

3. Solve ΔABC given that $\angle A = 58°$, $\angle B = 52°$, and $b = 62$.

   [A] $\angle C = 70°$, $a = 66.72$, $c = 73.93$ [B] $\angle C = 70°$, $a = 57.61$, $c = 68.7$

   [C] $\angle C = 250°$, $a = 57.61$, $c = 68.7$ [D] $\angle C = 250°$, $a = 66.72$, $c = 73.93$

4. Solve ΔABC given that $\angle A = 42°$, $\angle B = 59°$, and $b = 77$.

   [A] $\angle C = 79°$, $a = 98.64$, $c = 112.96$ [B] $\angle C = 79°$, $a = 60.11$, $c = 88.18$

   [C] $\angle C = 259°$, $a = 60.11$, $c = 88.18$ [D] $\angle C = 259°$, $a = 98.64$, $c = 112.96$

5. Establish the identity $\sin(\theta - 2\pi) = \sin\theta$.

6. Develop the identity for $\cos 2A$ using the identity for $\cos(A + B)$.

7. Simplify $\sin\left(\theta - \frac{\pi}{2}\right)$ by using the sum and difference identity. Use exact values.

8. $\cos(\theta + \pi)$ forms an identity with which of the following?

   [A] $-\sin\theta$ [B] $-\cos\theta$ [C] $\sin\theta$ [D] $\cos\theta$

9. $\cos\left(\theta - \frac{\pi}{2}\right)$ forms an identity with which of the following?

   [A] $\sin\theta$ [B] $-\sin\theta$ [C] $\cos\theta$ [D] $-\cos\theta$

10. Solve $\sin 2x = \cos x$ given that $0 \leq x < 2\pi$.

11. Solve $\tan^2 x = 3$ given that $0 \leq x < 2\pi$.

12. Show: $(\cos x + \sin x)^2 - 1 = \sin 2x$

13. Solve $2\cos^2 x = 13\sin x - 5$ given that $0 \leq x < 2\pi$.

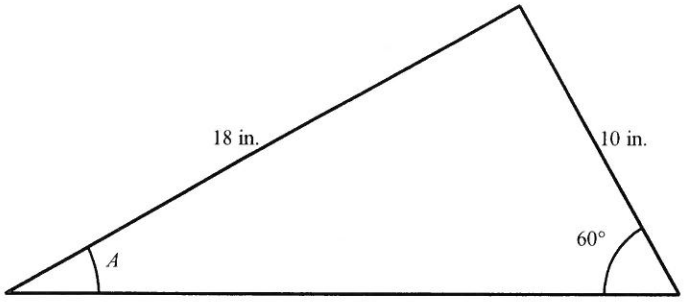
[A] $\frac{\pi}{6}, \frac{5\pi}{6}$ [B] $0, \frac{\pi}{3}, \pi, \frac{5\pi}{3}$ [C] $\frac{7\pi}{6}, \frac{11\pi}{6}$ [D] $\frac{3\pi}{4}, \frac{7\pi}{4}$

14. Solve $\sin 2x = \sin x$ given that $0 \leq x < 2\pi$.

[A] $0, \frac{\pi}{3}, \pi, \frac{5\pi}{3}$ [B] $\frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3}$

[C] $\frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4}$ [D] $0, \frac{3\pi}{4}, \pi, \frac{7\pi}{4}$

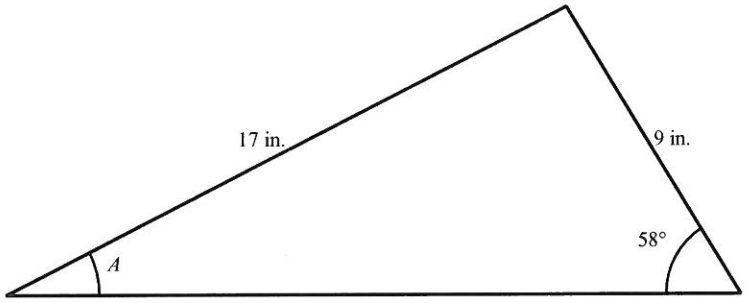
15. Solve this triangle for angle A and find the area.



[A] $A = 28.76°$, Area $= 92.65$ in.^{2} [B] $A = 28.76°$, Area $= 89.98$ in.^{2}

[C] $A = 30°$, Area $= 89.98$ in.^{2} [D] $A = 30°$, Area $= 92.65$ in.^{2}

16. Solve this triangle for angle A and find the area.



[A] $A = 32°$, Area $= 86.42$ in.^{2}

[B] $A = 26.68°$, Area $= 76.17$ in.^{2}

[C] $A = 26.68°$, Area $= 86.42$ in.^{2}

[D] $A = 32°$, Area $= 76.17$ in.^{2}