

Pre-AP Precal

Unit 5 Part 2 Review

Name _____

Date _____

1. If $\frac{\pi}{2} < \theta < \pi$ and $\sin \theta = \frac{2}{3}$, then $\sin 2\theta =$

- a) $-\frac{4\sqrt{5}}{9}$ b) $\frac{4\sqrt{5}}{9}$ c) $\frac{4}{3}$
 d) $-\frac{4}{3}$ e) $\frac{4\sqrt{13}}{13}$

2. If $\cos \theta = \frac{1}{8}$, the positive value of $\sin \frac{\theta}{2}$ is

- a) $\frac{3}{2}$ b) $\frac{\sqrt{7}}{4}$ c) $\frac{9}{16}$ d) $\frac{3}{4}$

3. If $\cos A = \frac{1}{3}$, then the positive value of $\tan \frac{1}{2}A$ is

- a) $\sqrt{2}$ b) $\sqrt{3}$ c) $\frac{\sqrt{3}}{3}$ d) $\frac{\sqrt{2}}{2}$

4. The expression $\frac{\sin 2A}{2 \cos^2 A}$ is equivalent to

- a) $\sin A$ b) $\tan A$ c) $\cot A$ d) $2 \tan A$

5. Which trigonometric function is equivalent to the expression $\frac{\sin 2x}{2 \sin x}$?

- a) $\tan x$ b) $\cot x$ c) $\sin x$ d) $\cos x$

6. For all values of A for which the expressions are defined, $\frac{\sin 2A}{\cos A} - \sin A$ is equivalent to

- a) 1 b) $\cos A$ c) $\sin A$ d) $2 \sin A$

7. The expression $\sin A \cos A + \sin 2A$ is equivalent to

- a) $\sin A(\cos A + \sin A)$ b) $\cos A + 2 \sin A$
 c) $3 \sin A \cos A$ d) $\cos A + 2 \sin 2A$

8. The expression $\frac{\sin 2x}{\sin(-x)}$ is equivalent to

- a) $-2 \sin x$ b) $2 \sin x$
 c) $-2 \cos x$ d) $2 \cos x$

9. In the interval $0 \leq \theta < 2\pi$, the number of solutions of the equation $\sin \theta = \cos \theta$ is

- a) 1 b) 2 c) 3 d) 4

10. If $\tan \theta = \frac{1+\sqrt{3}}{4}$, then angle θ may terminate in Quadrant

- a) I or III only b) II or IV only
 c) III or IV only d) I, II, III, or IV

11. In the interval $0 \leq x < 2\pi$, the solutions of the equation $\sin^2 x = \sin x$ are

- a) $0, \frac{\pi}{2}, \pi$ b) $\frac{\pi}{2}, \frac{3\pi}{2}$
 c) $0, \frac{\pi}{2}, \frac{3\pi}{2}$ d) $\frac{\pi}{2}, \pi, \frac{3\pi}{2}$

12. Solve for θ , where $(0 \leq \theta < 2\pi)$:

$$2 \sin^2 \theta + \sin \theta = 1$$

Exact values only.

- a) $0, \frac{\pi}{2}, \pi$ b) $\frac{\pi}{3}, \frac{2\pi}{3}, \frac{3\pi}{2}$
 c) $\frac{\pi}{6}, \frac{5\pi}{6}, \frac{3\pi}{2}$ d) $\frac{\pi}{6}, \frac{3\pi}{2}$
 e) $0, \frac{\pi}{6}, \frac{5\pi}{6}, \frac{3\pi}{2}$

13. Solve for θ , where $(0 \leq \theta < 2\pi)$:

$$2\cos^2 \theta - 5\cos \theta = 3$$

Exact values only.

- a) $\frac{2\pi}{3}, \frac{4\pi}{3}$
 b) $0, \frac{2\pi}{3}, \frac{4\pi}{3}$
 c) $0, \frac{\pi}{2}, \pi$
 d) $\frac{\pi}{3}, \frac{5\pi}{3}$
 e) $\frac{\pi}{3}, \frac{2\pi}{3}, \pi, \frac{4\pi}{3}, \frac{5\pi}{3}$

Solve.

14. $2\sin^2 \theta - 1 = 0$

15. $\csc^2 \theta - 2\csc \theta = 0$

16. $2\cos^2 \theta + 7\cos \theta = 4$

17. $5 + 4\cos \theta - 4\sin^2 \theta = 0$

18. Which value of θ satisfies the equation $2\cos^2 \theta - \cos \theta = 0$?

- a) $\frac{\pi}{3}$ b) $\frac{\pi}{4}$ c) $\frac{\pi}{6}$ d) 0

19. Which value of θ satisfied the equation $2\sin^2 \theta - 5\sin \theta - 3 = 0$?

- a) 300° b) 210° c) 150° d) 30°

20. What is one solution of the equation $(\sin x + \cos x)^2 = 2$?

- a) $\frac{\pi}{4}$ b) $\frac{\pi}{3}$ c) $\frac{\pi}{2}$ d) 0

21. A solution of the equation $\cos 2\theta + \sin 2\theta = -1$ is

- a) 240° b) 135° c) 45° d) -30°

22. For which value of x is the function $f(x) = \frac{1}{1-\tan x}$ undefined?

- a) 0 b) π c) $\frac{\pi}{3}$ d) $\frac{\pi}{4}$

23. For which value of x is $\tan(x + 30)^\circ$ undefined?

- a) -30 b) 60 c) 150 d) 330

24. Solve for x when $0 \leq x < 2\pi$.

$$\cos 6x \cos 3x - \sin 6x \sin 3x = -\frac{\sqrt{3}}{2}$$