

Grade 10 Advance Mathematics – Revision

Chapter 11

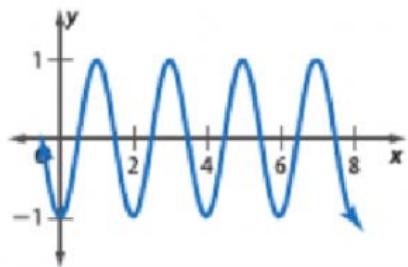
Answer all the questions

1. **STRUCTURE** The terminal side of angle θ in standard position intersects the unit circle at point P . Find $\cos \theta$ and $\sin \theta$.

$$P\left(\frac{15}{17}, \frac{8}{17}\right)$$

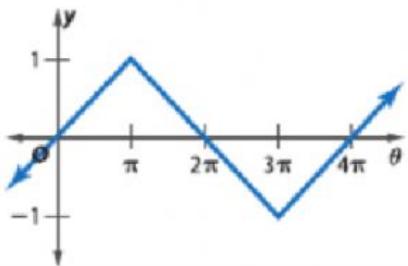
- (a) $\cos \theta = \frac{12}{17}, \sin \theta = \frac{15}{17}$ (b) $\cos \theta = \frac{15}{17}, \sin \theta = \frac{8}{17}$ (c) $\cos \theta = \frac{8}{17}, \sin \theta = \frac{15}{17}$

2. Determine the period of each function.



- (a) 4 (b) 2 (c) 3 (d) 5

3. Determine the period of each function.



- (a) 4π (b) π (c) 3π (d) 5π

4. Find the exact value of $\sin \frac{13\pi}{6}$.

- (a) $\frac{2}{7}$ (b) $\frac{1}{7}$ (c) $\frac{1}{2}$ (d) $\frac{3}{7}$

5. Find the exact value of $\sin(-60^\circ)$.

(a) $\frac{2\sqrt{3}}{7}$

(b) $-\frac{\sqrt{3}}{2}$

(c) $\frac{\sqrt{3}}{2}$

(d) $\frac{3\sqrt{3}}{2}$

6. Find the amplitude and the period of $y = 4\cos 3\theta$.

- (a) Amplitude = 4, Period 120° (b) Amplitude = 2, Period 120° (c) Amplitude = 4, Period 60°

7. Humans can hear sounds with frequencies as low as 20 hertz.

Find the period of the function.

(a) $1/5$

(b) $1/10$

(c) $1/20$

(d) $1/30$

8. Find the period of $y = \tan 2\theta$.

(a) 120°

(b) 10°

(c) 40°

(d) 90°

9. Find the period of $y = \frac{1}{2} \tan \theta$.

(a) 180°

(b) 10°

(c) 40°

(d) 90°

10. Find the amplitude and the period of $y = 5\sin \frac{2}{3}\theta$.

- (a) Amplitude = 5, Period 120°

- (b) Amplitude = 5, Period 180°

- (c) Amplitude = 5, Period 540°

11. State the amplitude, period, and phase shift for each function. Then graph the function.

$$y = \sin \left(\theta - \frac{\pi}{2} \right)$$

(a) Amplitude = 1, Period 2π , $h = \frac{\pi}{2}$

(b) Amplitude = 1, Period π , $h = \frac{\pi}{2}$

(c) Amplitude = 1, Period 4π , $h = \frac{\pi}{2}$

(d) Amplitude = 1, Period π , $h = \frac{3\pi}{2}$

12. State the amplitude, period, and phase shift for each function. Then graph the function.

$$y = \frac{1}{2} \cos(\theta + 90^\circ)$$

- (a) Amplitude = $1/2$, Period 360° , $h = 90^\circ$ (b) Amplitude = $1/2$, Period 180° , $h = 90^\circ$
(c) Amplitude = $1/2$, Period 360° , $h = -90^\circ$ (d) Amplitude = $1/2$, Period 180° , $h = -90^\circ$

13. Find the value of $\text{Arccos}(-1)$. Write angle measures in degrees and radians.

- (a) $120^\circ, \pi$ (b) $360^\circ, \pi$ (c) $180^\circ, \pi$ (d) $60^\circ, \pi$
14. Find the value of $\tan(\text{Cos}^{-1} 1)$. Round to the nearest hundredth if necessary.
- (a) π (b) 2π (c) 3 (d) 0

15. Solve the equation $\text{Cos}\theta = 0.9$. Round to the nearest tenth if necessary.

- (a) 25.8° (b) 22.8° (c) 23.8° (d) 24.8°