

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 $\sin \theta$.

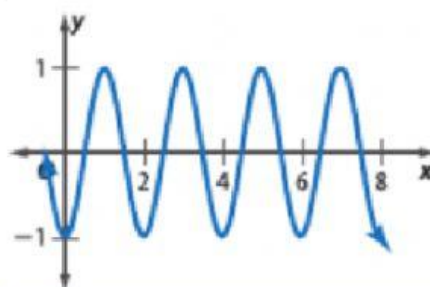
$$P\left(\frac{15}{17}, \frac{8}{17}\right)$$

(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.



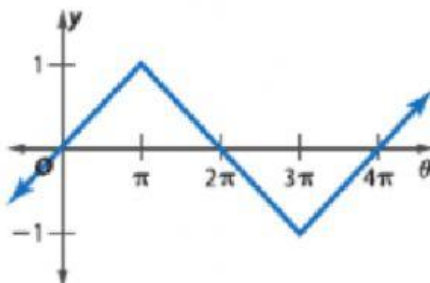
(a) 4

(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 $\tan(\cos^{-1}1)$. Round to the nearest hundredth if necessary.
-----	---

- | | | | |
|-----------|------------|-------|-------|
| (a) π | (b) 2π | (c) 3 | (d) 0 |
|-----------|------------|-------|-------|

15.	Solve the equation $\cos\theta = 0.9$. Round to the nearest tenth if necessary.
-----	--

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