

## Grade 10 Advance Mathematics – Revision

### Chapter 11

Answer all the questions

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

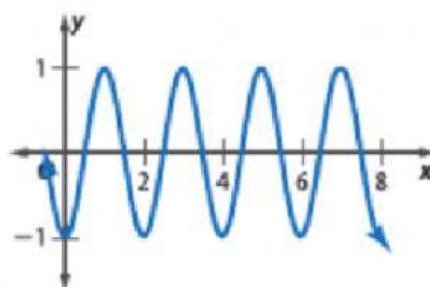
$$P\left(\frac{15}{17}, \frac{8}{17}\right)$$

(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.



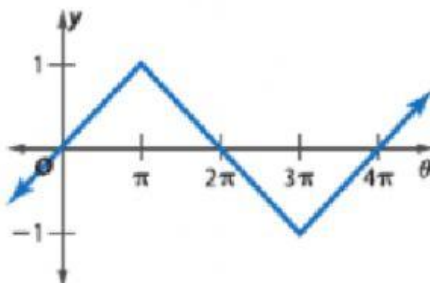
(a) 4

(b) 2

(c) 3

(d) 5

3. Determine the period of each function.



(a)  $4\pi$

(b)  $\pi$

(c)  $3\pi$

(d)  $5\pi$

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  $120^\circ$

(b) Amplitude = 2, Period  $120^\circ$

(c) Amplitude = 4, Period  $60^\circ$

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)  $120^\circ$

(b)  $10^\circ$

(c)  $40^\circ$

(d)  $90^\circ$

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

(a)  $180^\circ$

(b)  $10^\circ$

(c)  $40^\circ$

(d)  $90^\circ$

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

(a) Amplitude = 5, Period  $120^\circ$

(b) Amplitude = 5, Period  $180^\circ$

(c) Amplitude = 5, Period  $540^\circ$

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  $2\pi$ ,  $h = \frac{\pi}{2}$

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

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

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

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. |
|-----|--------------------------------------------------------------------------------------|

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|----------------------|----------------------|----------------------|---------------------|
| (a) $120^\circ, \pi$ | (b) $360^\circ, \pi$ | (c) $180^\circ, \pi$ | (d) $60^\circ, \pi$ |
|----------------------|----------------------|----------------------|---------------------|

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| 14. | Find the value of $\tan(\cos^{-1}1)$ . Round to the nearest hundredth if necessary. |
|-----|-------------------------------------------------------------------------------------|

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|-----------|------------|-------|-------|
| (a) $\pi$ | (b) $2\pi$ | (c) 3 | (d) 0 |
|-----------|------------|-------|-------|

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

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|------------------|------------------|------------------|------------------|
| (a) $25.8^\circ$ | (b) $22.8^\circ$ | (c) $23.8^\circ$ | (d) $24.8^\circ$ |
|------------------|------------------|------------------|------------------|