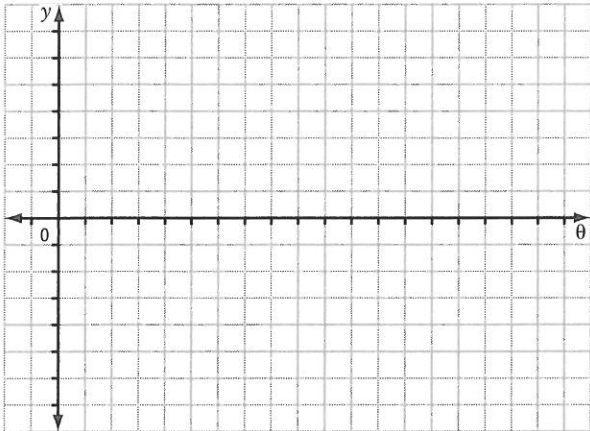


## Chapter 5 Review

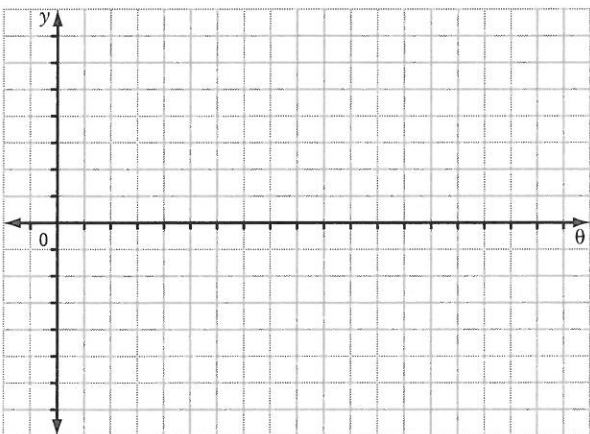
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### 5.1 Graphing Sine and Cosine Functions, pages 149–157

1. Graph at least two cycles of  $y = 3 \cos\left(\frac{1}{2}\theta\right)$ . State the amplitude and period in degrees.



2. Graph at least two cycles of  $y = -0.5 \sin(2\theta)$ . State the amplitude and period in radians.



3. Without graphing, determine the amplitude and period, in radians and in degrees, of each function.

a)  $y = 2 \sin 3x$

b)  $y = \frac{1}{3} \cos x$

c)  $y = \frac{3}{4} \cos 2x$

d)  $y = -4 \sin \frac{2}{3}x$

## 5.2 Transformations of Sinusoidal Functions, pages 158–166

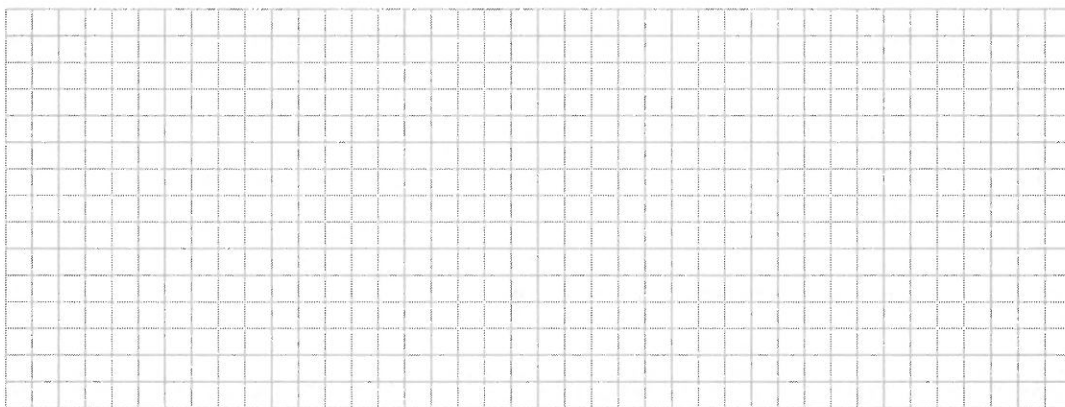
4. Determine the amplitude, period, phase shift, and vertical displacement with respect to  $y = \sin x$  or  $y = \cos x$  for each function.

a)  $y = 5 \sin \frac{1}{4} \left( x + \frac{\pi}{3} \right) - 1$

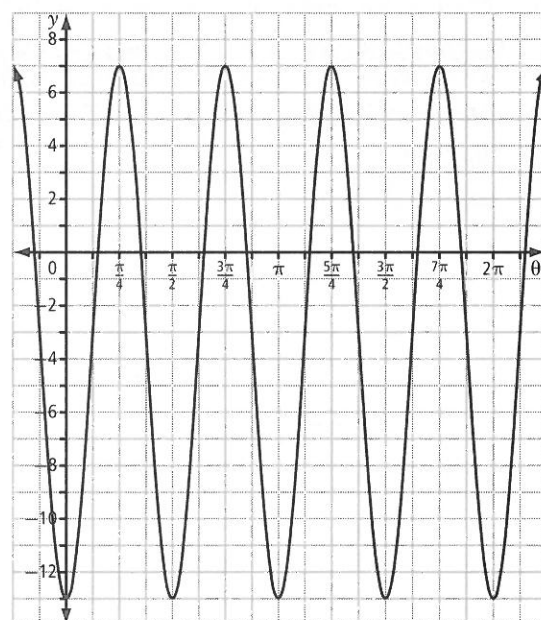
b)  $y = -\frac{1}{2} \cos 2(x - \pi) - 3$

c)  $y = 3 \cos 4(x + 50^\circ) + 6$

5. Graph at least two cycles of  $y = \sin 2 \left( x + \frac{\pi}{12} \right) - 0.4$ .

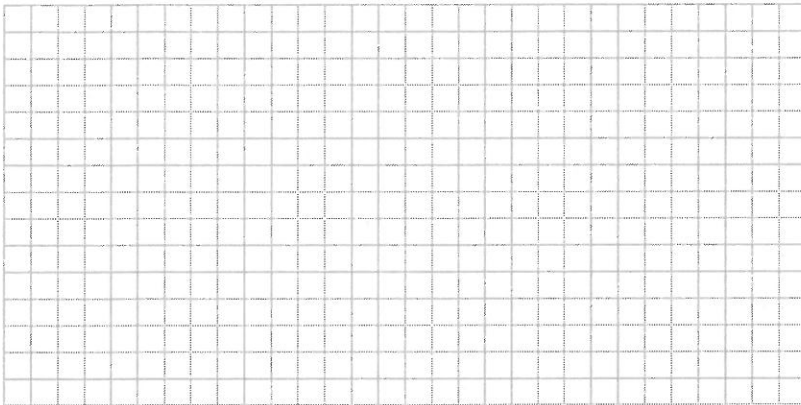


6. Write two equations of the form  $y = a \cos b(\theta - c) + d$  that represent the function shown below.

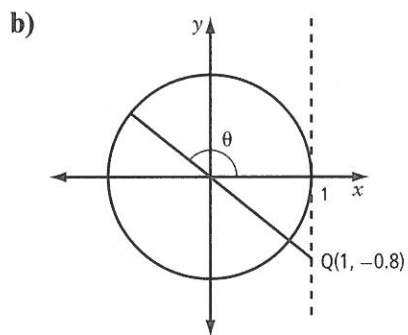
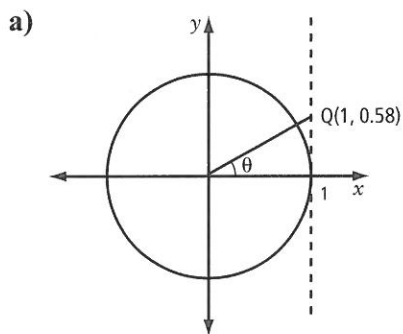


### 5.3 The Tangent Function, pages 167–174

7. Graph  $y = \tan x$  over the domain  $-\frac{3\pi}{2} \leq x \leq \frac{5\pi}{2}$ .



8. For each diagram, determine  $\tan \theta$  and the value of  $\theta$ , in degrees. If necessary, round your answer to the nearest tenth.



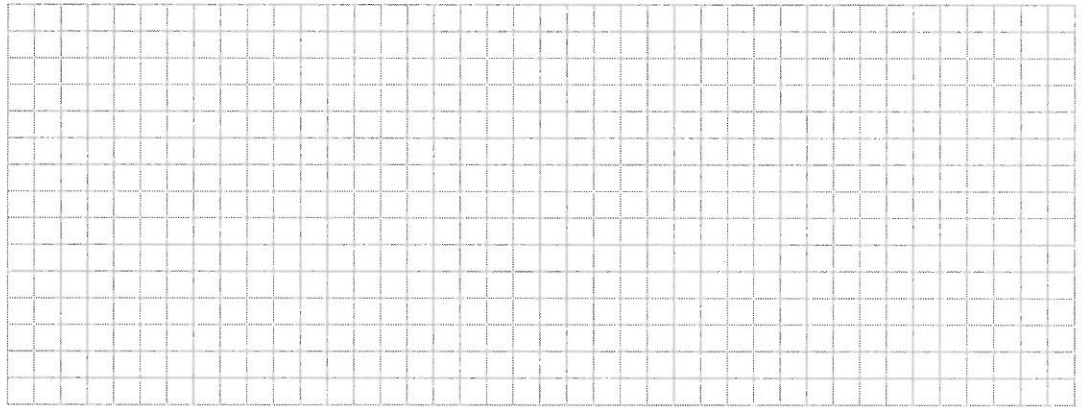
### 5.4 Equations and Graphs of Trigonometric Functions, pages 175–182

9. Write a sinusoidal function to model the average temperature in Nanaimo, BC.

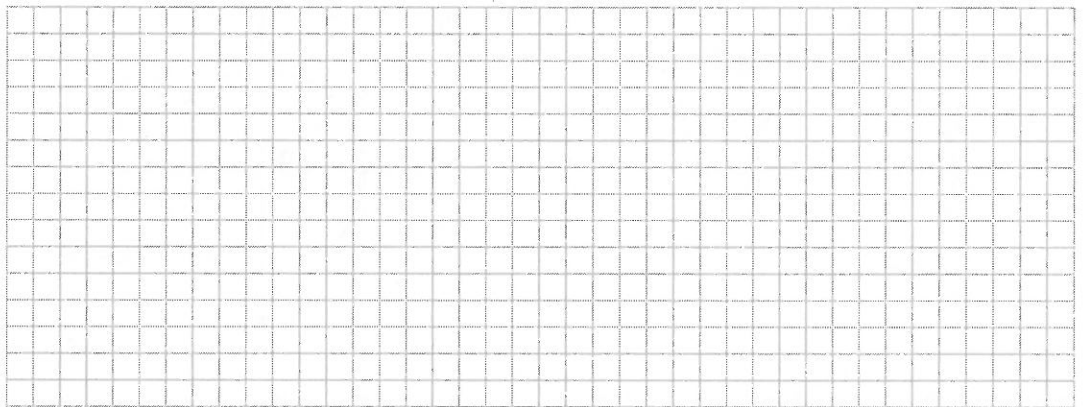
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
°C	1.9	3.6	5.3	8.1	11.8	14.9	17.3	17.2	14.2	9.4	5.1	2.8

10. Solve each equation by graphing.

a)  $\sin 2x = 0, 0 \leq x \leq 2\pi$



b)  $\cos\left(x + \frac{\pi}{2}\right) + 1 = 0, 0 \leq x \leq 2\pi$



c)  $\sin 2(x - 30^\circ) + 0.5 = 0$ , general solution in degrees

