

$$\begin{aligned}
 13. \quad \sum_{x=1}^4 \{x^2-1\} &= (1^2-1) + (2^2-1) + (3^2-1) + (4^2-1) \\
 &= (1-1) + (4-1) + (9-1) + (16-1) \\
 &= 0 + 3 + 8 + 15 \\
 &= 26
 \end{aligned}$$

$$\begin{aligned}
 14. \quad \sin 135^\circ + \cos 60^\circ &= -\sin 45^\circ + \cos 60^\circ \\
 &= \frac{\sqrt{2}}{2} + \frac{1}{2} \\
 &= \frac{1 + \sqrt{2}}{2}
 \end{aligned}$$

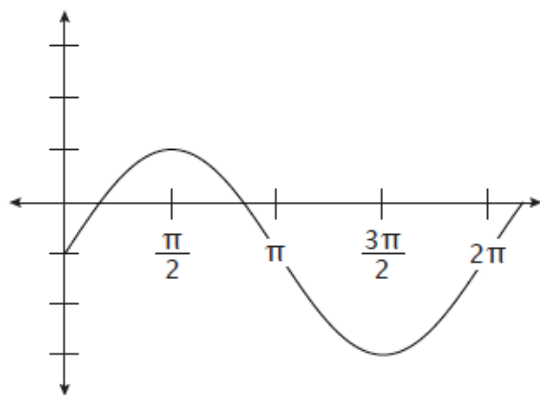
$$\begin{aligned}
 15. \quad f(g(x)) &= f(x^2+1) \\
 &= 2(x^2+1) - 3 \\
 &= 2x^2 + 2 - 3 \\
 &= 2x^2 - 1
 \end{aligned}$$

16. The domain will be all X where X+3 is greater than or equal to 0:
 $X + 3 \geq 0$
 $X \geq -3$
 domain: $[-3, \infty)$, or all numbers ≥ -3
 range: $[0, +\infty)$

$$17. \quad \left(\frac{7\pi}{4}\right)\left(\frac{180^\circ}{\pi}\right) = \frac{(7)(180^\circ)}{4} = \frac{1,260^\circ}{4} = 315^\circ$$

18. 70° ; quadrant III

19.



$$\begin{aligned}
 20. \quad a_1 &= -4 \\
 a_2 &= ar = (-4)\left(\frac{1}{2}\right) = -2 \\
 a_3 &= ar^2 = (-2)\left(\frac{1}{2}\right) = -1 \\
 a_4 &= ar^3 = (-1)\left(\frac{1}{2}\right) = -\frac{1}{2} \\
 &= -4, -2, -1, -\frac{1}{2}
 \end{aligned}$$

$$\begin{aligned}
 21. \quad c^2 &= a^2 + b^2 - 2ab \cos C \\
 c^2 &= (14)^2 + (12)^2 - 2(14)(12) \cos 56^\circ \\
 c^2 &\approx 196 + 144 - 336(.5592) \\
 c^2 &\approx 340 - 187.89 \\
 c^2 &\approx 152.11 \\
 c &\approx \sqrt{152.11} \\
 c &\approx 12.33
 \end{aligned}$$

$$\begin{aligned}
 \frac{a}{\sin A} &= \frac{c}{\sin C} \\
 \frac{(14)}{\sin A} &= \frac{(12.33)}{\sin(56^\circ)} \\
 (12.33)(\sin A) &= (14)(\sin 56^\circ) \\
 \sin A &= \frac{(14)(\sin 56^\circ)}{12.33} \\
 \sin A &\approx \frac{(14)(.8290)}{12.33} \\
 \sin A &\approx \frac{11.606}{12.33} \\
 \sin A &\approx .9413 \\
 A &\approx \arcsin .9413 \\
 A &\approx 70.3^\circ
 \end{aligned}$$

$$\begin{aligned}
 B &= 180^\circ - (70.3^\circ + 56^\circ) \\
 B &= 180^\circ - 126.3^\circ \\
 B &= 53.7^\circ
 \end{aligned}$$

$$\begin{aligned}
 22. \quad Q(t) &= 10e^{-kt} \\
 Q(365) &= 10e^{-(.0069)(365)} \\
 Q(365) &= 10e^{-2.5185} \\
 Q(365) &\approx 10(.0806) \\
 Q(365) &\approx .806 \text{ g}
 \end{aligned}$$