Section 2.1: page 42

(2) Domain $= \mathbf{R}$, Range $= \{5\}$

(4) Domain $= \mathbf{R}$, Range $= [2, \infty)$

(14) Domain $= [0, \infty)$

Section 2.2: page 54

(18) even function.

(20) neither even nor odd.

(22) even function.

(24) odd function.

(28) even function.

(30) neither even nor odd.

Section 2.3: page 69

(8) $f \circ g(x) = \sqrt{x-1}$

$g \circ f(x) = \sqrt{x} - 1$

$f \circ f(x) = \sqrt[4]{x}$

$g \circ g(x) = x - 2$

(10) $f \circ g(x) = (1 - x^2) + \dfrac{1}{1 - x^2}$

$g \circ f(x) = 1 - \left(x + \dfrac{1}{x}\right)^2$

$f \circ f(x) = \left(x + \dfrac{1}{x}\right) + \dfrac{1}{\left(x + \dfrac{1}{x}\right)} = \left(x + \dfrac{1}{x}\right) + \left(x + \dfrac{1}{x}\right)^{-1}$

$g \circ g(x) = 1 - (1 - x^2)^2 = 2x^2 - x^4$

(12) $f \circ g(x) = \sin(3x^2 + 12)$

$g \circ f(x) = \sin^2(3x) + 4$

$f \circ f(x) = \sin(3\sin(3x))$

$g \circ g(x) = (x^2 + 4)^2 + 4$

Section 2.4: page 81

(2) $\frac{\pi}{18} rad$

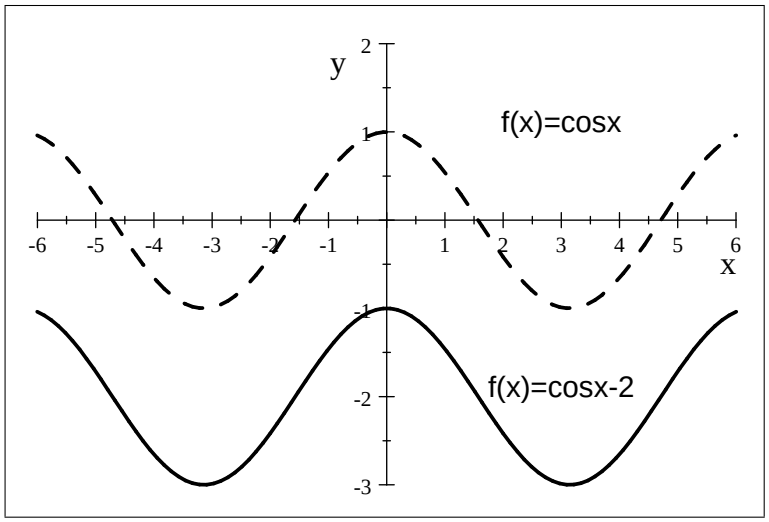
(8) 432°

(12) -72°

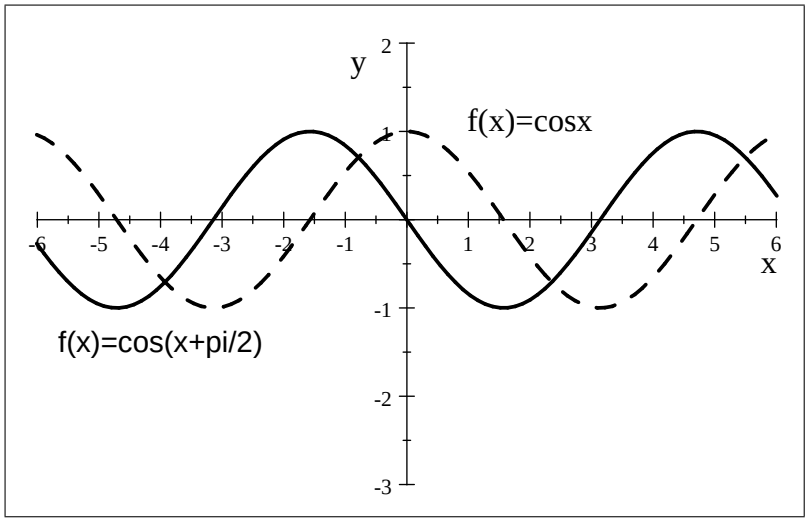
(14) false

(18) third quadrant. $\tan\theta = \frac{1}{3},\ \cos\theta = \frac{-3}{\sqrt{10}},\ \sec\theta = \frac{-\sqrt{10}}{3},\ \sin\theta = \frac{-1}{\sqrt{10}},$ $\csc\theta = -\sqrt{10}$

(28)



(32)



Section 2.5: page 90

(4) Domain = $\mathbf{R}$

Section 2.6: page 111

(2) $f^{-1}(x) = \sqrt[3]{\frac{1}{2}x + 1}$

(6) $f^{-1}(x) = x^{\frac{5}{3}}$

(8) $f^{-1}(x) = 2(x^3 - 1)$

(10) $f^{-1}(x) = \dfrac{1}{x - 1}$