$f(4) = 2(4)+4$ $g(12) = 4(12)^2+1$

$= 8+4$ $= 4(144)+1$

$f(4) = 12$ $= 576+1$

$= 577$

18) $f(x) = 2x + 4$, $g(x) = 4x^2 + 1$; Find $(g \circ f)(4)$. 18) B

A) 134 (B) 577 C) 16,901 D) 28

For the given functions f and g, find the requested composite function.

19) $f(x) = 5x + 11$, $g(x) = 3x - 1$; Find $(f \circ g)(x)$. 19) A

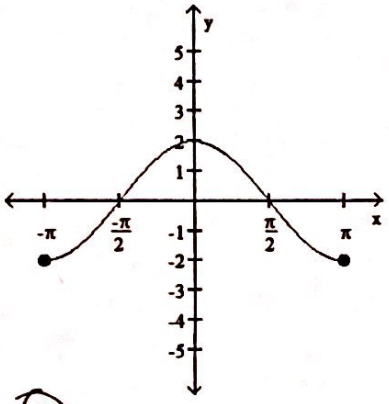
(A) $15x + 6$ B) $15x + 32$ C) $15x + 10$ D) $15x + 16$

20) $f(x) = -6x + 9$, $g(x) = 2x + 8$; Find $(g \circ f)(x)$. 20) D

A) $-12x + 57$ B) $12x + 26$ C) $-12x - 10$ (D) $-12x + 26$

The graph of a function is given. Decide whether it is even, odd, or neither.

21) 21) A



(A) even B) odd C) neither

19) $5(3x-1)+11 = f(g(x))$

$= 15x - 5 + 11$

$f(g(x)) = 15x+6$

20) $g(f(x)) = 2(-6x+9)+8$

$= -12x + 18 + 8$

$g(f(x)) = -12x + 26$

Decide whether or not the functions are inverses of each other.

22) $f(x) = (x - 2)^2$, $x \geq 2$; $g(x) = \sqrt{x} + 2$ 22) A

(A) Yes B) No

$y = (x-2)^2$

$\sqrt{x} = \sqrt{(y-2)^2}$

$\sqrt{x} = y - 2$

$+2 \quad +2$

$y = \sqrt{x} + 2$

The function f is one-to-one. Find its inverse.

23) $f(x) = 3x - 7$ 23) A

(A) $f^{-1}(x) = \frac{x+7}{3}$ B) $f^{-1}(x) = \frac{x-7}{3}$ C) $f^{-1}(x) = \frac{x}{3} + 7$ D) $f^{-1}(x) = \frac{x}{3} - 7$

24) $f(x) = \frac{2}{x}$ 24) B

A) $f^{-1}(x) = \frac{x}{2}$ (B) $f^{-1}(x) = \frac{2}{x}$ C) $f^{-1}(x) = -2x$ D) $f^{-1}(x) = 2x$

25) $f(x) = x^3 - 3$ 25) B

A) $f^{-1}(x) = \sqrt[3]{x-3}$ (B) $f^{-1}(x) = \sqrt[3]{x+3}$ C) $f^{-1}(x) = \sqrt[3]{x} - 3$ D) $f^{-1}(x) = \sqrt[3]{x} + 3$

23) $y = 3x - 7$

$x = 3y - 7$

$+7 \quad +7$

$\frac{x+7}{3} = \frac{3y}{3}$

$y = \frac{x+7}{3}$

24) $y = \frac{2}{x}$

$y(x) = \frac{2}{(x)}$

$\frac{xy}{x} = \frac{2}{x}$

$y = \frac{2}{x}$

25) $y = x^3 - 3$

$x = y^3 - 3$

$+3 \quad +3$

$\sqrt[3]{y^3} = \sqrt[3]{x+3}$

$y = \sqrt[3]{x+3}$