The range of $f(x) = 1 - 2\sin\left(\frac{x^2-1}{e^{\cos x}}\right)$ is:

A) $[-1,3]$ .

B) $[0,4]$ .

C) $[1,5]$ .

D) $[2,6]$ .

E) None of the above.

Let $f(x) = \frac{\sin^{-1}\left(\frac{x}{\pi}\right)}{\sin x}$. The domain of the function $f(x)$ is

A) $(-\pi, \pi) - \{0\}$.

B) $[-\pi, \pi] - \{0\}$.

C) $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right] - \{0\}$.

D) $(-\infty, \infty) - \{n\pi : n = 0, 1, 2, \dots\}$

E) $[-\pi, \pi]$.

Given $f(x) = \frac{3}{1+x}$ and $g(x) = \frac{6}{x+2}$. The domain of $(f o g)(x)$ is:

A) $(-\infty, \infty) - \{-1\}$.

B) $(-\infty, \infty) - \{-2\}$.

C) $(-\infty, \infty) - \{-8\}$.

D) $(-\infty, \infty) - \{-2, -1\}$.

E) $(-\infty, \infty) - \{-8, -2\}$.

Which of the following functions is one-to-one (1-1)?

A) $f(x) = \ln(x)^{10}$,

B) $f(x) = \cos x\,,\ 0 \leq x \leq 2\pi$

C) $f(x) = e^{x^2} + 1$

D) $f(x) = 10(\ln x)$

E) None of the above functions is 1-1

If $f(u) = \frac{1}{1-u^2}$, $u = x\sqrt{x}+\frac{1}{x}$ and $g(x) = 3x^3 - 2$. Then

$(fog^2)'(1) =$

$$\sec\left(\cos^{-1}\frac{1}{8}\right)=$$

If $F(x) = c_1 x e^x + c_2 e^x$ is an antiderivative of $f(x) = xe^x$. Then $13c_1 - 5c_2 =$

$$\csc\left(\sin^{-1}\frac{1}{5}\right) =$$

The range of $f(x) = 3 - 2\sin\left(\frac{x^2-1}{e^{\cos x}}\right)$ is:

A) $[-1, 3]$.

B) $[0, 4]$.

C) $[1, 5]$.

D) $[2, 6]$.

E) None of the above.

Let $f(x) = \frac{\sin^{-1}\left(\frac{x}{\pi}\right)}{\sin x}$. The domain of the function $f(x)$ is:

A) $(-\pi, \pi) - \{0\}$.

B) $[-\pi, \pi] - \{0\}$.

C) $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right] - \{0\}$.

D) $(-\infty, \infty) - (n\pi : n = 0, 1, 2, \ldots)$

E) $[-\pi, \pi]$.

**Let** $\int_0^b [\cos x\, f(x) + \sin x\, f'(x)]\, dx = 3$**, where** $\tan b = -\sqrt{3}$ $(0 < b \leq \pi)$**. Then** $(f(b))^4 =$

The range of $f(x) = 2 - 2\sin\left(\frac{x^2-1}{e^{\cos x}}\right)$ is:

A) $[-1, 3]$.

B) $[0, 4]$.

C) $[1, 5]$.

D) $[2, 6]$.

E) None of the above.

$$\csc\left(\sin^{-1}\frac{1}{7}\right) =$$

We get the graph of $y = 3 + 2^{x+1}$ by shifting the graph of $y = 2^x$

A) 1 unit left and 3 units up.

B) 1 unit left and 3 units down.

C) 1 unit right and 3 units down.

D) 1 unit right and 3 units up.

E) 3 units left and 1 unit up.

We get the graph of $y = -3 + 2^{x-1}$ by shifting the graph of $y = 2^x$

A) 1 unit left and 3 units up.

B) 1 unit left and 3 units down.

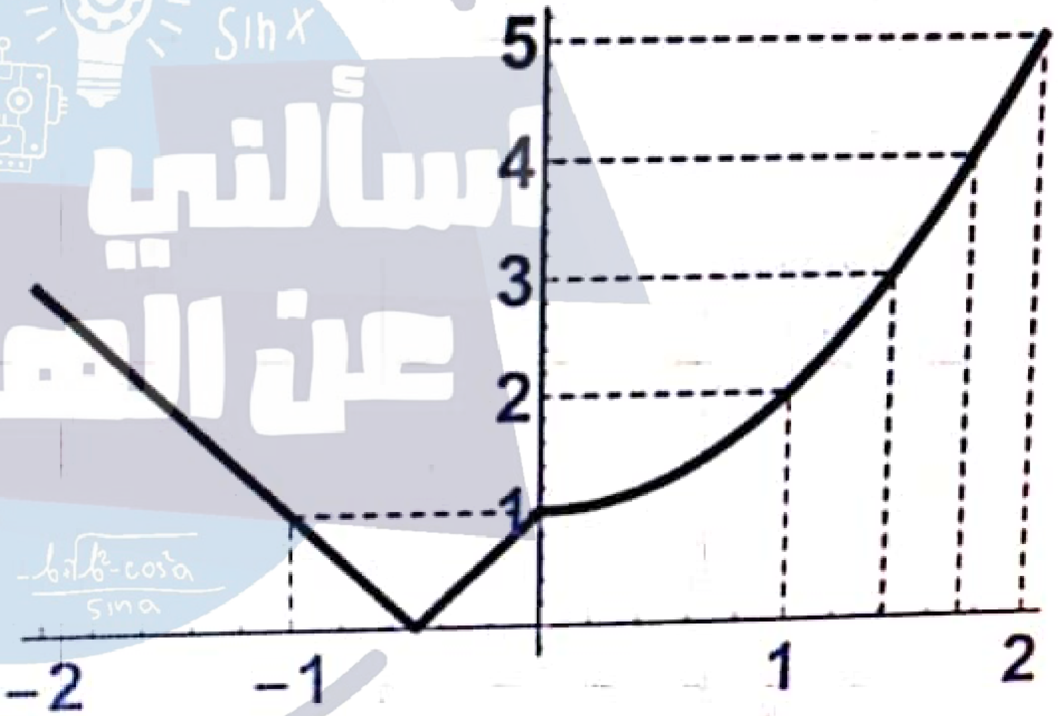
C) 1 unit right and 3 units down.

D) 1 unit right and 3 units up.

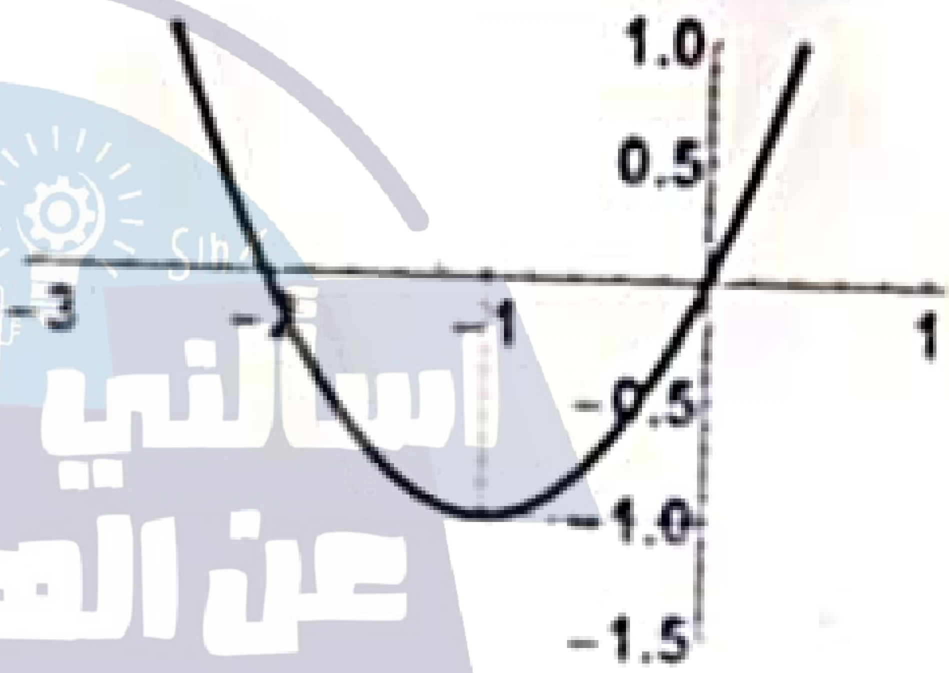
E) 3 units left and 1 unit up.

The following is the graph of $f(x)$.

Then $(f \circ f)(1) =$



the function $f(x) =$




A) $(x-1)^2-1$

B) $(x-1)^2+1$

C) $(x+1)^2+1$

D) $(x+1)^2-1$

E) $x^2-1$

Given $f(x) = \frac{3}{1+x}$ and $g(x) = \frac{1}{x+2}$. The domain of $(fog)(x)$ is:

A) $(-\infty, \infty) - \{-1\}$.

B) $(-\infty, \infty) - \{-2\}$.

C) $(-\infty, \infty) - \{-3\}$.

D) $(-\infty, \infty) - \{-2, -1\}$.

E) $(-\infty, \infty) - \{-3, -2\}$.

The range of $f(x) = 3 - 2\sin\left(\frac{x^2 - 1}{e^{\cos x}}\right)$ is:

A) $[-1, 3]$.

B) $[0, 4]$.

C) $[1, 5]$.

D) $[2, 6]$.

E) None of the above.

Let $f(x)$ be an odd function and $g(x)$ be any function with

| $x$ | 1 | 2 | 3 | $-3$ |
|---|---|---|---|---|
| $f(x)$ | 3 | $-3$ | 1 | $-1$ |
| $g(x)$ | 3 | 1 | $-2$ | 2 |

Then $g \circ f(-1) =$

Given $f(x) = \frac{3}{1+x}$ and $g(x) = \frac{5}{x+2}$. The domain of $(fog)(x)$ is:

A) $(-\infty, \infty) - \{-1\}$.

B) $(-\infty, \infty) - \{-2\}$.

C) $(-\infty, \infty) - \{-7\}$.

D) $(-\infty, \infty) - \{-2, -1\}$.

E) $(-\infty, \infty) - \{-7, -2\}$.

Let $f(x)$ be an odd function and $g(x)$ be any function with

| $x$ | 1 | 2 | 3 | $-3$ |
|---|---|---|---|---|
| $f(x)$ | 3 | $-3$ | 1 | $-1$ |
| $g(x)$ | 3 | 1 | $-2$ | 2 |

Then $g \circ f(-1) =$

$$\sec\left(\cos^{-1}\frac{1}{6}\right) =$$

The range of $f(x) = 4 - 2\sin\left(\frac{x^2-1}{e^{\cos x}}\right)$ is:

A) $[-1, 3]$ .

B) $[0, 4]$ .

C) $[1, 5]$ .

D) $[2, 6]$ .

E) None of the above.

The range of $f(x) = 1 - 2\sin\left(\frac{x^2-1}{e^{\cos x}}\right)$ is:

A) $[-1, 3]$ .

B) $[0, 4]$ .

C) $[1, 5]$ .

D) $[2, 6]$ .

E) None of the above.

Given $f(x) = \frac{3}{1+x}$ and $g(x) = \frac{1}{x+2}$. The domain of $(fog)(x)$ is:

A) $(-\infty, \infty) - \{-1\}$.

B) $(-\infty, \infty) - \{-2\}$.

C) $(-\infty, \infty) - \{-3\}$.

D) $(-\infty, \infty) - \{-2, -1\}$.

E) $(-\infty, \infty) - \{-3, -2\}$.

$$\sec\left(\cos^{-1}\frac{1}{8}\right) =$$

The range of $f(x) = 2 - 2\sin\left(\frac{x^2-1}{e^{\cos x}}\right)$

A) $[-1, 3]$.

B) $[0, 4]$.

C) $[1, 5]$.

D) $[2, 6]$.

E) None of the above.