CBSE NET JANUARY 2017 PAPER II

The functions mapping R into R are defined as:

f(x) = x3-4x, g(x)=1/(x2+1) and h(x)=x4
Then find the value of the following composite functions:

hog(x) and hogof(x)

(1) (x2+1)4 and [(x3-4x)2+1]4
(2) (x2+1)4 and [(x3-4x)2+1]- 4
(3) (x2+1)- 4 and [(x3-4x)2+1]4
(4) (x2+1)- 4 and [(x3-4x)2+1]- 4

Ans: (4)

Explanation:

hog(x) = h(1/(x2+1))
= [(1/(x2+1))]4 = (x2+1)- 4

hogof(x) = hog(x3-4x)
= hog(x3-4x)
= [(x3-4x)2+1]- 4 [since hog(x) = (x2+1)- 4]

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