koolearn
新东方在线

Function notation

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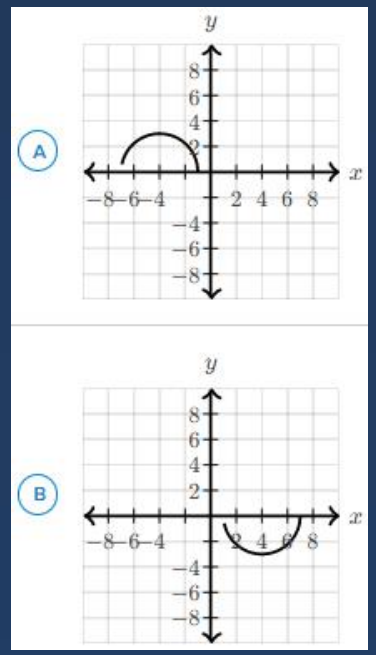
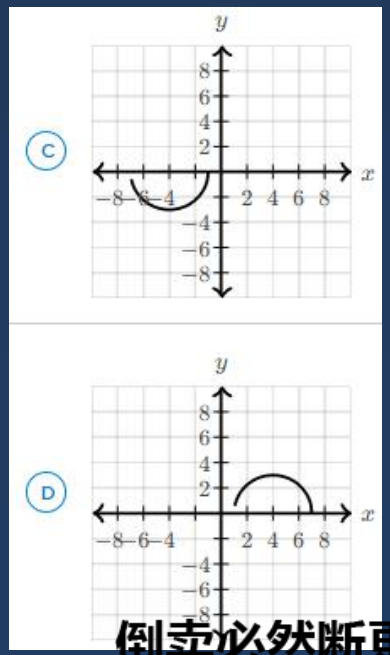
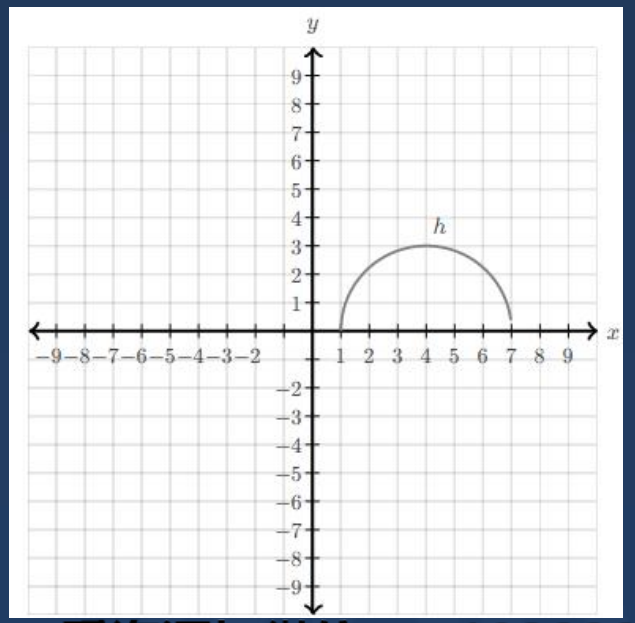
1.The graph of h is shown above. If $f(x)=h(-x)$, which of the following represents the graph of f?







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2.Let f(x)=x−1/x and let g(x)=1/x .
Assuming xx does not equal 0, which of the following is equivalent to f(g(x)) ?

A. $\frac{x}{x^2-1}$

B. 0

C. x

D. $\frac{1}{x}-x$

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3.Let g(x)=8x−5. Which of the following is equivalent to g(g(x))?

A. 64x−10
B. 64x−45
C. $64x^2$+25
D. $64x^2$-80+25

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x	$f(x)$	$g(x)$
-2	-6	-5
-1	2	-2
2	3	4
7	7	11

4.Consider the table shown above. What is the value of $(g \circ f)(-1)$?

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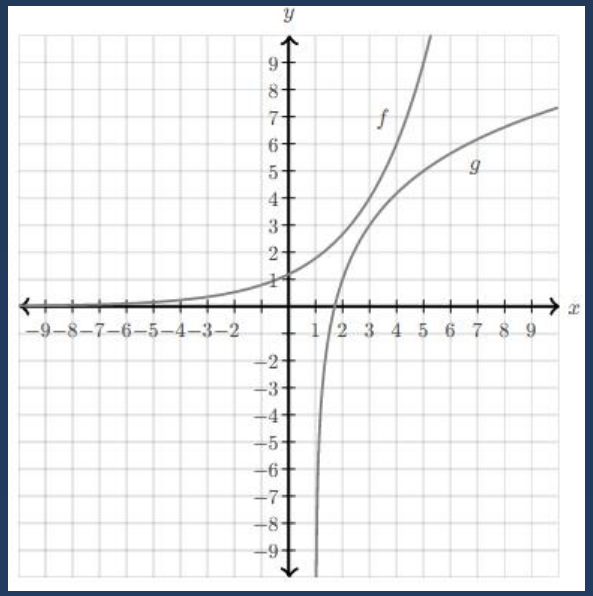
5.Consider the graphs of function f and function g shown below.



What is the approximate value of g(f(5))?

A. 3.5
B. 5
C. 7
D. 9

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6.Functions p(x) and q(x) are graphed in the xy-plane. The graph y=p(x) is equivalent to the graph y=q(x) reflected over the xx-axis and then reflected over the y-axis. Which of the following correctly relates p(x) and q(x)?

A. $p(x)=q(x)$
B. $p(x)=q(-x)$
C. $p(x)=-q(-x)$
D. $p(x)=-q(x)$

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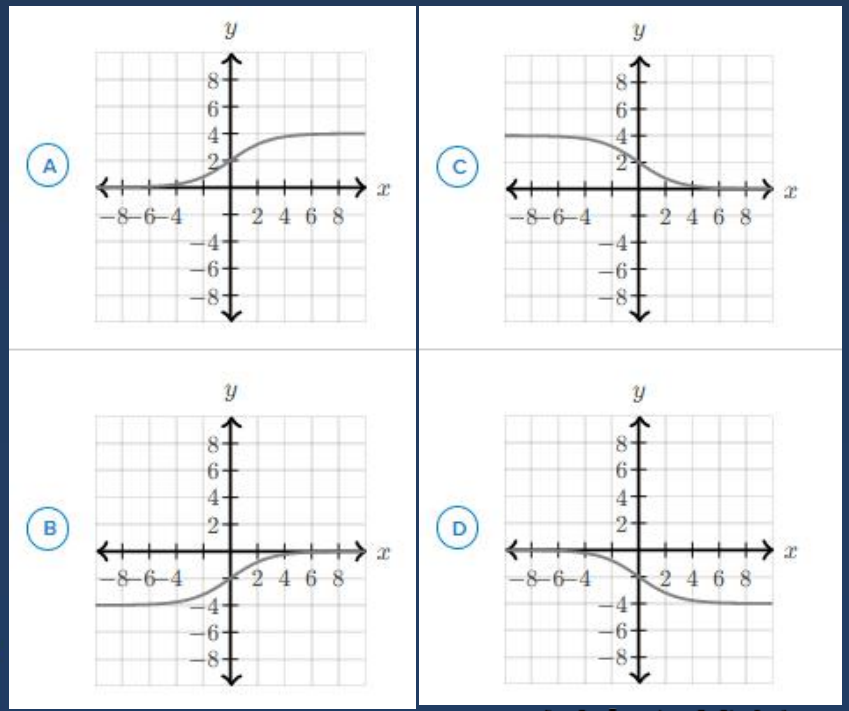
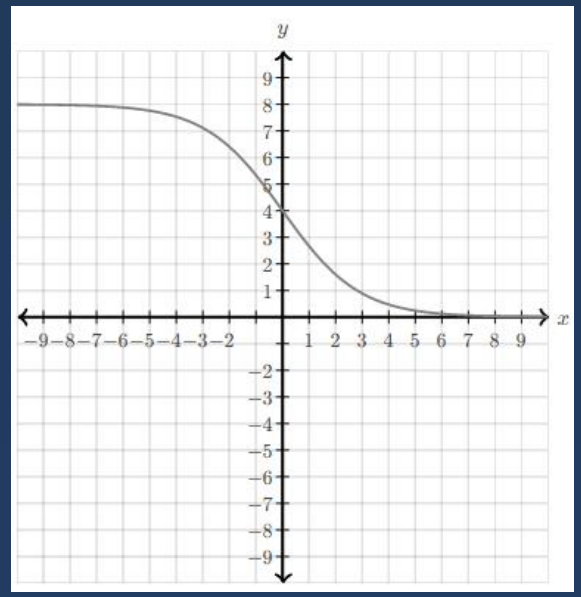
7.The graph of y=f(x) is shown above. If g(x)= $\frac{f(-x)}{2}$, which of the following is the graph of y=g(x)





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x	$f(x)$
0	2
1	4
2	3
3	1
4	0

8.Consider the following table shown above. What is the value of f(f(4))?

A. 0
B. 1
C. 2
D. 3

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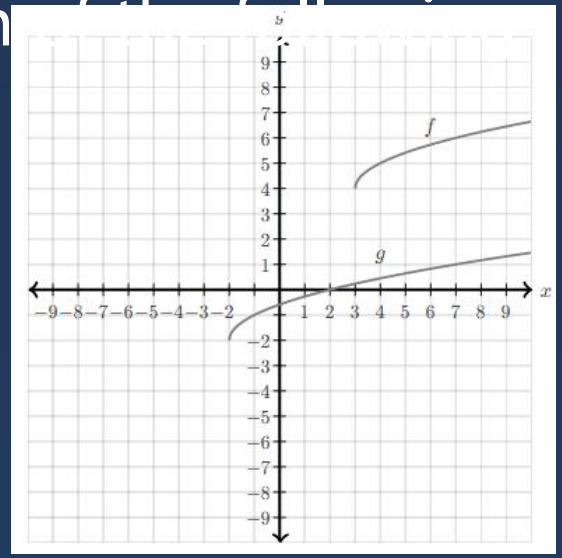
9.Consider the graphs of function f and function g shown above. Which of the following could be true?

A. f(x)=g(x+5)+6
B. f(x)=g(x−5)+6
C. g(x)=f(x−5)+6
D. g(x)=f(x+5)+6



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x	$f(x)$	$g(x)$
1	1	1
2	1	3
3	2	6
4	3	10
5	5	15
6	8	21

10.Consider the table shown above.
What is the value of (f◦ g)(3)?
A. 2
B. 3
C. 6
D. 8

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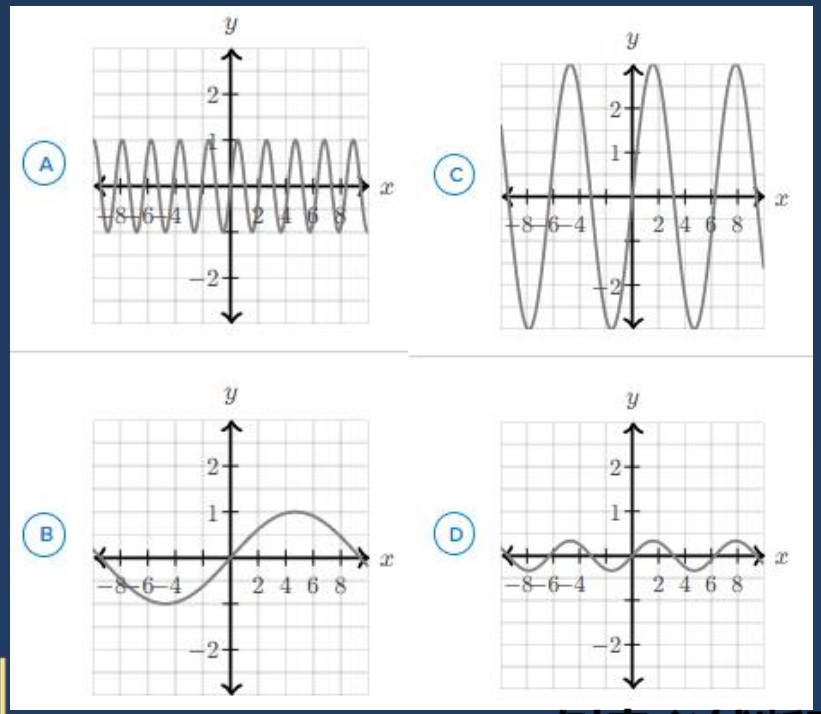
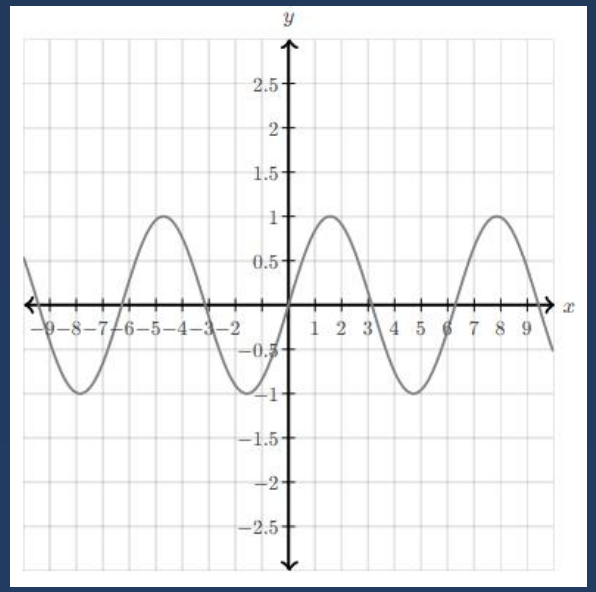
11.The graph of y=sinx is shown above. Which of the following is the graph of y=sin3x?





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12.The graph of function f can be shifted 4 to the left to obtain the graph of function g. If f(x)=x^3, which of the following is equivalent to function g?

A. g(x)= x^3-4

B. g(x)= x^3+4

C. g(x)= $(x-4)^3$

D. g(x)= $(x+4)^3$

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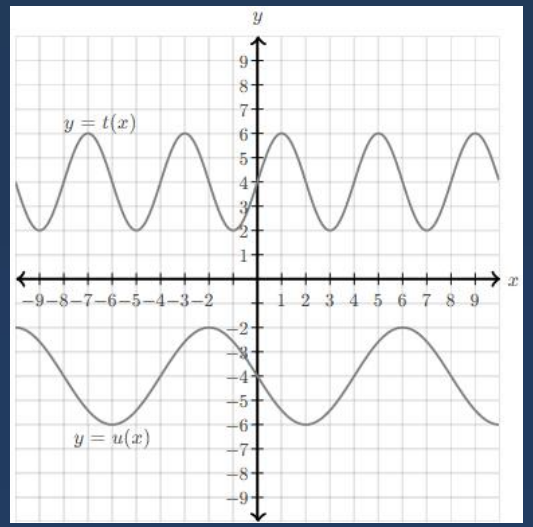
13.The graphs y=t(x) and y=u(x) are graphed in the xy-plane above. Which of the following could be true?

A. u(x)=−t(2x)
B. u(x)=−t(−2x)
C. u(x)=−t(x/2)
D. u(x)=−t(−x/2)



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14.Let h(x)=(x+2)/(x-5) . Which of the following is equivalent to h(h(x))?

A. $-\frac{2}{5}, x \neq 5$

B. $\frac{x+4}{x-3}, x \neq 3 \ or \ 5$

C. $\frac{3x-8}{-4x+27}, x \neq 5 \ or \ \frac{27}{4}$

D. $\frac{(x+2)^2}{(x-5)^2}, x \neq 5$

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15.Let f(x)=(2x-2)/ (x^2+1) and g(x)= x^2+1. What is the value of f(1+g(1))?

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16.The graph of function g is the graph of function f stretched horizontally by a factor of 2. Which of the following correctly defines function g?

A. $g(x)=2f(x)$
B. $g(x)=(1/2)f(x)$
C. $g(x)=f(2x)$
D. $g(x)=f((1/2)x)$

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Consider the following table.

x	$f(x)$	$g(x)$
1	2	2
2	3	2
3	5	1
5	6	4

17.What is the value of f(g(2))?

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18.The graph of y=f(x) can be shifted 3 units in the positive xx-direction and 3 units in the positive y-direction to obtain the graph of y=h(x). If f(x)=4x+10 and h(x)=ax+b, where a and b are real constants, what must be the value of b?

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19.Functions p(x) and w(x) are graphed in the xy-plane. The graph of y=p(x) is equivalent to the graph of y=w(x) translated 4 units upward and 3 units to the left, where the positive x-direction is to the right and the positive y-direction is upward. Which of the following correctly relates w(x) and p(x)?

A. $w(x)=p(x-3)+4$
B. $w(x)=p(x+3)+4$
C. $w(x)=p(x-3)-4$
D. $w(x)=p(x+3)-4$

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20.The graph of function h is the graph of function g stretched vertically by a factor of 3 and reflected over the y-axis. Which of the following correctly defines function h?

A. $h(x)=-3g(x)$
B. $h(x)=3g(-x)$
C. $h(x)=g(-3x)$
D. $h(x)=-g(3x)$

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