

Name: \_\_\_\_\_

Show work needed to justify your answer.

Date: \_\_\_\_\_

HW: # 2: Math IBSL - Standard 2 - Function Notation

5 points

1 Calculate the substitutions indicated for each given function.

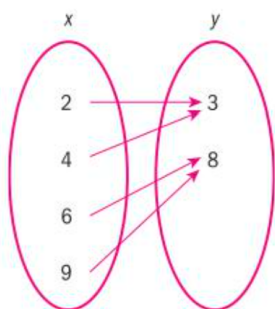
a  $g(x) = -x^2 + 2, g(-4)$

b  $f: x \rightarrow 5x - 1, f(-9)$

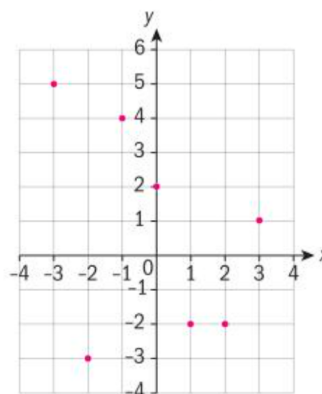
c  $C(n) = 20n + 250, C(100)$

d  $h(x) = -4, h(5)$

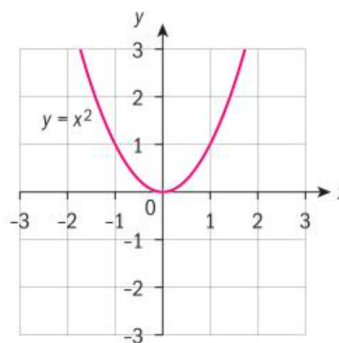
e  $f(2)$  for the mapping diagram below



f  $f(-3)$  for the graph below



g  $f(-1)$  for the graph below



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2 If  $f(x) = -3x^2 - 1$ ,  $g(x) = -4x + 7$  and  $h(x) = 6$ , find:

- a**  $f(-3)$                       **b**  $g(15)$   
**c**  $f(1) + g(-1)$         **d**  $h(0)$   
**e**  $f(x - 2)$                 **f**  $g(n)$

- 5 A British telecommunications company offers the following roaming data package to its customers: a flat fee of £25 plus £10 per gigabyte of data
- a** Express the total cost,  $C$ , as a function of the number of gigabytes of data ( $g$ ).
- b** What values of  $g$  do not make sense in this context?
- c** State the notation that could be used to find the roaming cost for a trip where 14 gb of data is used? Calculate this value.
- d** State the notation that could be used to find the number of gigabytes of data one can use for a total bill of £100. Calculate this value.
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