

6. [8 points] The parts of this problem are unrelated.

a. [5 points] The following table gives the values of the variables x , A , B , and C :

x	-1	1	2	4
$A = a(x)$	1	-2	-4	-2
$B = b(x)$	4	3	2	-1
$C = c(x)$	1	5	7	11

(i) Given the values in the tables above, which of the following statements **could** be true? Circle all that apply.

A is a function of B

B is a function of A

None of these

(ii) Which of the functions could be (or are) concave down on the **entire** interval $-1 \leq x \leq 4$? Circle all that could be correct, and justify your answers algebraically.

Answer: $a(x)$

$b(x)$

$c(x)$

none of these

Justification:

b. [3 points] Two lines are given by the equations $y = Kx + 5$ and $x + y = 4$, where K is some constant. For what value(s) of K , if any, will these two lines intersect at $x = 1$? Show your work or explain your reasoning.

Answer: $K =$ _____