BECA / IB Math 01-Linear functions Name:
21 September 2021

1.6 PreQuiz: Functions

1. Do Now: A trainer plans a pyramid workout routine. Let x be the set number.

Sample Bench Press Pyramid (Bill Geiger)
Set 1: 135 lbs, 15 reps
Set 2: 185 lbs, 12 reps
Set 3: 205 lbs, 10 reps
Set 4: 225 lbs, 8 reps
Set 5: 245 lbs, 6 reps
Set 6: 265 lbs, 4 reps

   (a) On the third set, when $x = 3$, how much weight is lifted?

   (b) On which set is the weight 245 pounds?
   (express your answer in the form $x =$ a number)

   (c) Interpret the ordered pair $(2, 185)$ in this context.

   (d) Does the weight increase by a constant amount with each set? Explain.
   (i.e. is the slope constant?)

2. Consider the function $f(x) = 100 - 10x$.

   (a) Write down the independent variable.

   (b) Calculate $f(10)$

   (c) Show that $f(4.5) = 55$

   (d) There is an x for which $f(x) = -30$. Find this value of x.

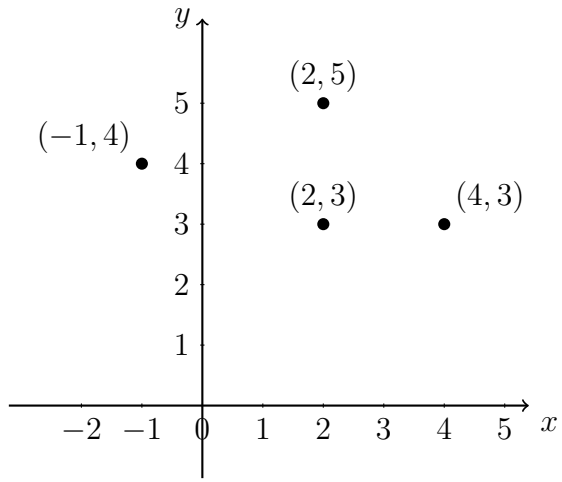
3. A relation composed of four points is plotted on the graph below, and represented as a set of ordered pairs as $\{(-1,4),(2,3),(2,5),(4,3)\}$

   (a) Write down the domain.

   (b) Write down the range.

   (c) What is the image of 4?

   (d) Is the relation a function? Why or why not.



4. An investor owns a building with five apartments. She calculates the monthly profit depending on the number of apartments rented, shown in the table.

Units rented	0	1	2	3	4	5
Profit($000)	-85	-70	-40	-10	20	50

   (a) What is her profit if the building is fully rented?

   (b) How many apartments must be rented in order not to lose money?

   (c) Is her profit linear? (does it increase by a constant amount with each apartment?) Explain why or why not in the context of the situation.

5. The graph of a function f is shown on the grid below.

   (a) What is $f(3)$?

   (b) Write down the domain.

   (c) Write down the range.