TRS 92: Introduction to Functions

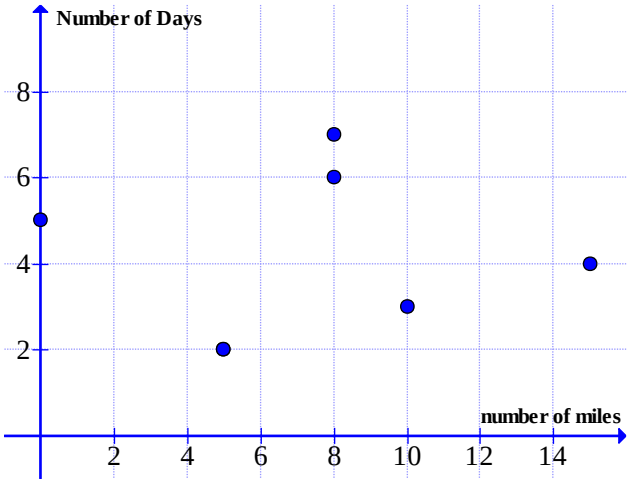
Gordy is training for a half marathon. He is following a training regimen that sets how many miles he should run each day. The regimen for the first week is given below:

# of Day	1	2	3	4	5	6	7
# of Miles	5	5	10	15	0	8	8

1. The relation is graphed below.
   a. Based on the graph, define the independent and dependent variables. Assign letters to the variables.

      Independent: _____

      Dependent: _____

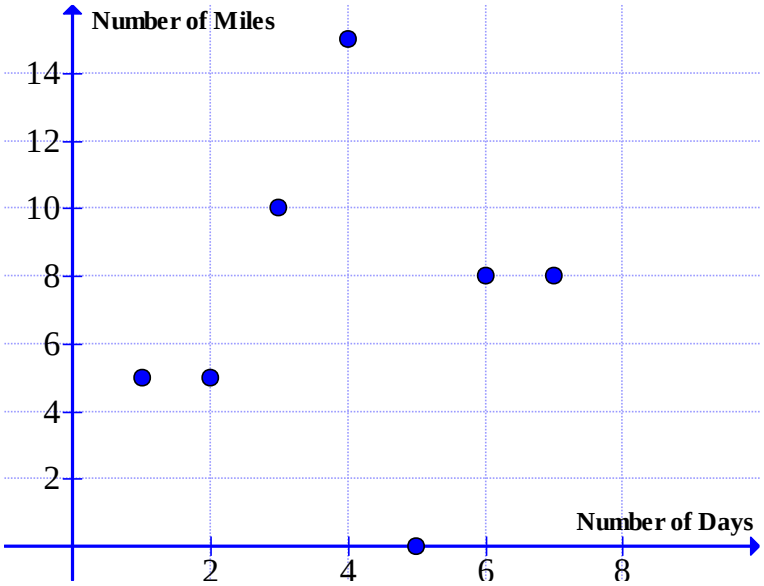


   b. Gordy says he ran 8 miles yesterday. Given the relation, can you *specifically* determine which day this was in the program? Why or why not?

   c. Can you *specifically* determine the day on which Gordy will run 10 miles? Why or why not?

   d. Can the independent variable in this relation always be used to determine the dependent variable?

2. The same relation is graph below.
   a. What has been changed about the graph?



   b. Gordy says he is in Day 4 of the program. Given the relation, can you *specifically* predict the number of miles he ran? Why or why not?

   c. Can you specifically predict how many miles Gordy will run on Day 7? Why or why not?

   d. Can the independent variable in this relation always be used to predict the dependent variable?

Relations can be represented in verbal form, graphs, tables or equations (sometimes called a rule, model or formula). For each relation on the following page, indicate if the independent variable can always be used to predict/determine the dependent variable.

3.

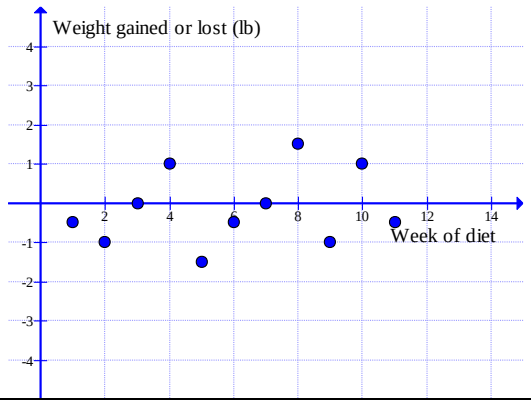
Yes **No**

Phone usage is the independent variable.

Phone Usage (min)	Monthly Cost ($)
48	40
75	40
180	40
214	40
360	40
505	40

4.

Yes **No**



5.

Yes **No**

$a + b = 8$

a is the independent variable.

6.

Yes **No**

Monthly Cost is the independent variable.

Phone Usage (min)	Monthly Cost ($)
48	40
75	40
180	40
214	40
360	40
505	40

7.

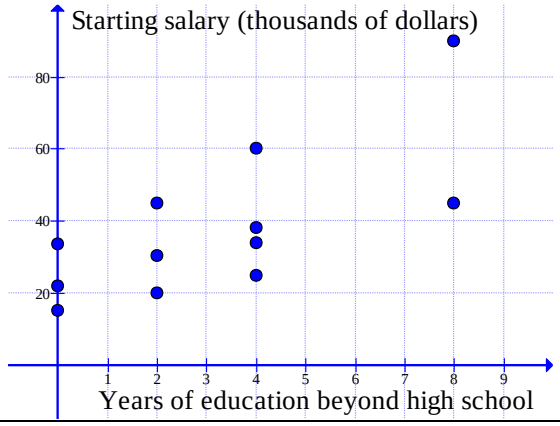
Yes **No**

x is the independent variable

x	***y***
4	8
7.5	15
10	20
11.25	22.5
15	30
19	38

8.

Yes **No**



9.

Yes **No**

$$a = b^2$$

a is the independent variable

10.

Yes **No**

Sherri sells each cross-stitch decoration for $5. The independent variable is the number of decorations and the dependent variable is the amount she makes in dollars.