**Methods, Parameters, and Return Values**

1. Describe in your own words what a *method* is. Give the name of 4 methods that you have being using in your programs.

A method is a ‘chunk’ of code that you give a name to. You can then call this code to run whenever you want with one single line using the name of them method. Example of methods that we have used are instance\_destroy(), draw\_text(…), point\_distance(…), instance\_create(…)
2. What is a *parameter* and what role do they have in programming?

Some methods require that you give parameters that the method can use. Parameters will help the method do it’s job. Example: with instance create, you have to give three parameters: x position, y position, and the type of object you want the method to make. Another example: draw\_text requires an x position, a y position, and a string of text to draw. Another example: the cos method requires that you give an angle in radians. Parameters let methods be more versatile for the user. Imagine a draw\_text method that had no parameters – you wouldn’t be able to tell it where or what to draw!
3. How do you know what parameters are required by a method?

You read the help file in gamemaker or you can look at the bottom of the screen when you start typing the method name out and it will list the parameters.
4. Sometimes methods return values. What does this mean?

some methods will send you back a value. For example, the point\_direction method will send you back a number value (the direction!). This makes some methods very useful. The method instance\_number sends you back a value of the number of an object type. Methods can return numbers, strings, or true/false in game maker. Method can only return one value.
5. Give an example of a method that we have used that returns an integer.
instance\_number

Give an example of a method that we have used that returns an integer that represents an object id.
instance\_find
Give an example of a method that we have used that returns a boolean (true or false).
keyboard\_check(vk\_up)
Give an example of a method that we have used that returns a string (there is only one).
string( ) used to convert a number to a string
6. In most programming languages, there is a method that will let you find the cosine or sine of an angle. What is this method in Gamemaker? How many parameters does it have? Does it return a value? If so, what type of value is return?

cos, sin. You give it the angle (in radians). It has one parameter. It returns one number value.
7. Use the reference material to find out how YOU can determine how many *enemy* objects are currently on the screen. Hint: starts with the word *instance*
num = instance\_number(enemies)

Give an example of how you would use this in your code to check if all the *enemy* have been destroyed.
*if ( instance\_number(enemies)=0 ) { show\_message(“All enemy base belong to us!”) }*
8. Look up the method called instance\_position. What does it do?

instance\_position(100,150,obj\_ball)
It tells you the id of an object at the location. If there is no obj at that location, it sends back -4.

How would you use it to check if there is NO object at the location x=100, y=200 ?

if instance\_position(100,200, all) = -4 { there is no one there! }