1. Use *while* to print out a table of Fahrenheit and Celsius temperature equivalents from -50 degrees F to 50 degrees F in 5-degree increments. On the Fahrenheit temperature scale, water freezes at 32 degrees and boils at 212 degrees. On the Celsius scale, water freezes at 0 degrees and boils at 100 degrees. So, to convert from Fahrenheit to Celsius, you subtract 32 from the temperature, multiply by 5, and divide by 9. To convert from Celsius to Fahrenheit, you multiply by 9, divide by 5, and then add 32.

2. You will make a converter from Fahrenheit to Celsius using the same logic as before. The user should enter the Fahrenheit value and the tool should convert it and show the user the resulting value.

3. Write a function that prints an HTML <img> tag. It will take as a mandatory parameter the image URL, and alt, heght and width will be optional.

4. Make another version of the previous exercise, where you will only have to pass the filename as parameter. The function will add a global variable to the filename in order to make the full URL. **A function like this is an easy way to keep your image tags correct, even if the images move to a new path or a new server.**

5. Colors used on websites such as #ffffff and #cc1198 are made by concatenating the hexadecimal color values for red, green, and blue (RGB). Write a function that accepts decimal red, green, and blue arguments and returns a string containing the appropriate color in order to use it in a web page. For example, if the arguments are 255, 0, and 255, then the returned string should be #ff00ff. Built-in function dechex( ) could be useful.

6. What kind of check would you add to a *validateForm*( ) function to check that a submitted form field named *username* contains only letters and numbers? Use if( ), preg_match( ), and a regular expression.

7. Write a PHP method that extracts text inside brackets from a given string. For instance: “Write a program [now!]” → “now!”

8. Write a method with two string parameters. The method should check if the first string contains the second one.

9. Write a method where given an email address, it extracts the user ID. For instance, ilarranaga@jesuitasformacion.com would be ilarranaga.

10. Write a PHP method in order to find the first character that differs given two string.

11. Write a PHP method that given an array of elements, a position, and a new item, it inserts the new ítem in the given position.

12. Write a PHP method to get the shortest and the longest string length from a given array. Print them out.

13. According to Wikipedia these are the biggest cities in Spain according to their population.

Posición	Ciudad	Comunidad Autónoma	Población
1	Madrid	Comunidad de Madrid	3.151.689
2	Barcelona	Cataluña	1.602.386
3	Valencia	Comunidad Valenciana	787.266
4	Sevilla	Andalucía	696.676
5	Zaragoza	Aragón	666.058
6	Málaga	Andalucía	566.913
7	Murcia	Región de Murcia	439.712
8	Palma de Mallorca	Islas Baleares	399.093
9	Las Palmas de Gran Canaria	Islas Canarias	382.283
10	Bilbao	País Vasco	346.574

14. Define an array that holds this information (city vs. population only). Create a method called print_cities, that prints the information dynamically in a table.

    After that, create another method called print_cities_ordered_by_population, that will modify previous method so that the rows in the result table are ordered by population. Finally, create another method that prints the information ordered by the city name (print_cities_ordered_by_name).

15. You are going to create a basic calculator. There should be two text boxes for the corresponding operands and a <select> menu to choose an operation (addition, subtraction, multiplication or division). In order to validate the inputs, you have to see if they are numeric and appropriate for the chosen operation. The *process_form* method should display the operands, the operator and the result. *Note: You have to use the FormHelper class we have been using and separate the view layer from the other parts of the program.*

16. Create one form with three select boxes: one for the day (1-31), another one for the month(1-12) and finally another for the year(1970-2020). You have to validate if the chosen date is valid or not. Hint: There is a method called checkdate that does that for you. If the date chosen is valid, it will return in the same page with the form "You have entered a well-formed data"; if not, "Try another date!". Note: You must use the FormHelper class and build the view in a separate file.

17. Create a program that will display, validate and process a form that asks the user to enter information about a package he/she want to ship. Here are the requirements:

- The form should contain inputs for the from and to addresses for the package. All fields are mandatory. The provinces should validate its values against this list. The zip code should have 5 numbers only (no more or less).
- Apart from that you should have some mandatory fields for the dimensions of the package and its weight. The validation has to check that the package weight is more than 15kg and that package dimensions are less than 2x2 meters.
- The process_form method has to print out the information in an organized, formatted report.

Note: You have to use the FormHelper class we have been using and separate the view layer from the other parts of the program.