Problem 1.

(a) puts does not require any format specifiers, and it automatically goes to a new line after printing
(b) puts is good for static messages because we don't need to worry about printing variables. Whatever we type into the string is what will be output onto the screen

Problem 2.

(a) 12345 is treated as an int and 123456789012 is treated as a long
(b) 3.14 is implicitly treated as a double and 3.14f is explicitly defined as a float
(c) There is an implicit terminating character at the end of strings in c “\o”, so the length of a string is 1 longer than it appears.
(d) The smallest unit for a type allowed in c is 1 byte, so bool also uses 1 byte because it needs no more than that.

Problem 3.

(a) the 0.1 is incorrect
(b) Because of how decimal numbers are represented by the machine's hardware, if the denominator of the number is not a power of two then we will get rounding errors because our machine has to try and represent any number in base 2 binary. The other number do have base 2 denominators so they can be represented without rounding
(c) In this case, 0.1 is still inaccurate for the same reason, but it is closer to 0.1 because a double type has double the number of binary places to represent the number, which means it need not be rounded as much as the float type. This i why mathematicians and scientists almost always use doubles instead of floats

Problem 4.

(a) If the “if” statement evaluates as 0, then it will be false. Any non-zero evaluation will be treated as true.