Tutorial 8

Question 1: (7)

a) Assume we define:

```
int8_t  foo  =  0xAA;
```

What is the data type of: `&foo` (1)

b) What will be the data type and value of `bar_ptr` after the following? (2)

```
uint32_t   *foo_prt  =  (uint32_t*)0xAABBCCDD;
uint32_t   *bar_ptr  =  foo_ptr + 0x11;
```

c) Assuming an array of 20 `uint32_t's` is defined and given the name `my_array`.
Assume the compiler places element 0 of the array at address 0x2000 0510.
Which memory addresses will be modified and to what value if the following line of code is run:

```
my_array[32]  =  0xAA;
```

(4)

Question 2: (3)

In `someFunction`, after the called to adder has been made, what are the values of `foo` and `bar`? Explain.

```
uint32_t someFunction(void) {
      uint16_t  foo  =  0xAABB;
      uint16_t  bar  =  0xCCDD;
      adder(&foo,  &bar);
}

uint32_t adder(uint16_t  *a, uint16_t  *b) {
      *a = *a + *b;
      b++;
}
```

Bonus: (2)

In the above, if the line:
`b++;`
was placed before the line:
`*a = *a + *b;`
would this change the result? How?

Marked out of: 10
Available marks: 12