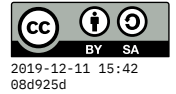# Quiz 1

*16 September 2019*

| Solutions |
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1. Convert the following numbers from the specified bases *into* base ten.

   - $263_7$ = __143__ $_{10}$

   - $263_8$ = __179__ $_{10}$

2. Convert the base ten number 193 into base nine.

   - $193_{10}$ = __234__ $_9$

3. Convert the following base ten (decimal) numbers into binary, using as many bits as needed.

   - 14 = ___1110___

   - 41 = __101001__

   - 63 = __111111__

4. Convert the following **unsigned** binary numbers into base ten.

   - 1101 = __13__

   - 111 = _7_

   - 11001 = __25__

5. Convert the following 4-bit **signed two's complement** binary numbers into base ten. **Note:** "signed" means that answers **might be negative.**

   - 1011 = __-5__

   - 0101 = __+5__

   - 1111 = __-1__

   - 1001 = __-7__

6. Add the following **4-bit fixed-size** binary numbers. **Also** convert each number to base ten. **Note:** "fixed-size" means that your answers **must fit in 4 bits.**

```
  1 1 1
    1 0 1 1   = 11
  + 1 1 1 0   = 14
  _____
    1 0 0 1   =  9
```