Perform the appropriate binary arithmetic function for the following binary numbers assuming a 6-bit 1's compliment system.

- Indicate whether or not there is an overflow condition, with brief explanation.
- Also, convert the numbers to decimal to check your results.

Hint: Remember that subtraction is the same as addition of a negative number.

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a) 100011 + 010101

```
  100011
+ 010101
--------
  111000  →  -7
```

No overflow condition

---

b) 110000 – 000101

```
  110000
- 000101
--------
  101011  →  -20
```

No overflow condition

---

c) 110000 + 010010

```
  110000
+ 010010
--------
 1000010  →  -61
```

Overflow condition

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d) 101100 – 001110

```
  101100
- 001110
--------
  011110  →  30
```

No overflow condition