Subtract 42 from 24 (10 bits) (2's com)

So, $24 - 42$

$\Rightarrow 24 + (-42)$

42 (unsigned) → 101010

+42 → 0101010

+42 (10 bits) → 0000101010

Now, 1111010101

\+ 1

1111010110

$-42 \rightarrow 1111010110$

24 (unsigned) → 11000

+24 → 011000

+24 (10 bits) → 0000011000

Now,

0000011000 → +24

\+ 1111010110 → −42

1111101110 → −18

No overflow since different signed numbers were added.

Q: How can we be sure that it is -18?

A: Unsigned 18 → 10010

+18 → 010010

+18 (10 bits) → 0000010010

to get -18, we need to calculate 2's comp

So, 1111101101

\+ 1

1111101110 → -18

-18 → 1111101110