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COSC 2331-01 asg 2

1 14 + 20 = 34

14 = 0000 1110

20 = 0x14 = 0001 0100

```
  0000 1110
  0001 0100
  ---------
  0010 0010 = 0x22 = 32+2 = 34
```

2 45 − 45 = 0

16|45 = 0x2D = 0010 1101 (2−13)

2's = 1101 0010 + 1 = 1101 0011

```
  45 = 0010 1101
 -45 = 1101 0011
       ---------
      X0000 0000 = 0
```

3 −12 + 22 = 10

12 = 0000 1100

2's = 1111 0011 + 1

16|22 = 0001 0110 (1−6)

```
 -12 = 1111 0100
 +22 = 0001 0110
       ---------
       0000 1010 = 0xA or 10
```

4 120 − 20 = 100

16 | 120 = 0111 1000

7 − 8

2's = 1110 1011

120	0111 1000
−20	1110 1100

0110 0100 = 0x64 = 6·16 + 4 = 100

20 = 0x14 = 0001 0100

−20 = 1110 1100

5 32 − 5 = 27

32 = 0x20 = 0010 0000

5 = 0000 0101

2's = 1111 1010

32	0010 0000
−5	1111 1011

0001 1011 = 0x1B = 16 + 11 = 27

−5 = 1111 1011

6 0x BE = 16·11 + 14 = 190 (unsigned)

0x BE = 1011 1110 = 0100 0001

0100 0010 = 0x42 = 66 (signed)

7 0x 3D = 16·3 + 13 = 61 (unsigned)

0x 3D = 0011 1101 = 61 (signed)

↑ 1st digit is 0 so positive

8

	1101 (13)	0110 1000 (104)
	1011 (11)	0010 1101 (45)
1	1000 (8)	1001 0101 (149)
	incorrect (carry flag)	correct! (overflow if signed)