Numbers - Errors

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Outline

Ex1

```
#include <stdio.h>


int main(void) {

  int   a = 314;
  float x = 3.14;

  printf("a= %d \n", a);
  printf("x= %f \n", x);

  printf("a= %f \n", a);
  printf("x= %d \n", x);
}
```

```
gcc -Wall t.c
t.c: In function ‘main’:
t.c:12:10: warning: format ‘%f’ expects
argument of type ‘double’, but argument 2
has type ‘int’ [-Wformat=]
   printf("a= %f \n", a);
          ^
t.c:13:10: warning: format ‘%d’ expects
argument of type ‘int’, but argument 2
has type ‘double’ [-Wformat=]
   printf("x= %d \n", x);
          ^

$ ./a.out
a= 314
x= 3.140000
a= 3.140000
x= 2
```

Ex2 : Truncation

```
#include <stdio.h>


int main(void) {

  int   a;
  float x;


  a = 3;
  x = 3;

  printf("a= %d \n", a);
  printf("x= %f \n", x);

  a = 3.14;
  x = 3.14;

  printf("a= %d \n", a);
  printf("x= %f \n", x);

  a = 3.99;
  x = 3.99;
```

```
$ gcc -Wall t.c
$ ./a.out
a= 3
x= 3.000000
a= 3
x= 3.140000
a= 3
x= 3.990000
```

Ex3 : Overflow

```
#include <stdio.h>


int main(void) {

  int   a = 0x7FFFFFFF;
  int   b = 0x80000000;

  printf("a  = %d \n", a);
  printf("a+1= %d \n", a+1);
  printf("a+2= %d \n", a+2);

  printf("b  = %d \n", b);
  printf("b-1= %d \n", b-1);
  printf("b-2= %d \n", b-2);

}
```

```
$ gcc -Wall t.c
$ ./a.out
a  = 2147483647
a+1= -2147483648
a+2= -2147483647
b  = -2147483648
b-1= 2147483647
b-2= 2147483646
```