

Must-Know

int	-2,147,483,648 to +1,147,483,647
float	4bytes, contain 1 digit/decimal, +- 10 ³⁸ , 7digitsprecision, f, illegalfloats: 6.2.2f, 6.-3f, 6.2
double	8bytes, +-10 ³⁰⁸ , 14digitprecise
variable	upper/lowercase differ, reflects data stored, given to memory location
destructive read	Reference
destructive write	Write Over
types of c statements	declarations/arithmetic instructions/control instructions
Order of Operations (L->R)	!, * / %, + -, < > <= >=, == !=, && , =
Functions	AND (&&), OR (), NOT (!)
QuadForm ula	$(-b \pm \sqrt{(b*b) - 4ac}) / (2a)$
While Loop	executed 0 or more times. Does test, then body
Do-While Loop	executed 1+ times. Does body, then test
absolute value	abs(#)

Formatting Printf

```
printf("%6d", 123);
printf("%03d", 5);
printf("%7.2f", 6.789);
```

OUTPUTS WITHOUT SPACES

```
output: ___ 1 2 3
output: 005
output: ___ 6 . 7 9
```

Do While Loop (b)

```
i=5;
do
{
printf(i);
```

Do While Loop (b) (cont)

```
i++;
}
while(i>3);
```

Executed 1+ times. Output: 5

While Loop (b)

```
k=7;
while(k<5)
{
printf("%d", k);
k++;
}
```

Executed 0+ times. Output: (nothing)

Switch-Case

```
int dc;
scanf("%lf", &dc);
switch(dc) //can only switch a non
double/non float
{
case 0 : printf("switch case
statement 1");
break;
case 1 : printf("switch case
statement 2");
break;
default; //do default case, below
this line
printf("DEFAULT CASE");
break;
}
```

Logical If

```
If(logical expression)
{
//block of code
}
else
{
//statement if false
}
```

For Loop (a)

```
for(i=0; i<10; i++) //INIT, TEST,
LOOP ALTER
{
printf("%d", i); //BODY
}
```

Rewrite of While Loop (a)

While Loop (a)

```
i=0; //INIT
while(i<10); //TEST
{
printf("%d", i); //BODY
i++; //LOOP ALTER
}
```

Rewrite of For Loop (a)

Pyramid Code Snippet

```
for(r=0; r<7; r++) //outer: 7 rows
{
for(s=0; s<r; s++) //controls spaces
{
printf(" ");
}
for(a=0; a<____*r; a++) //MATH
{
printf("*"); //controls stars
}
```

Pyramid Math

r	# stars
---	---------

0	11
---	----

1	9
---	---

- 1) Find m: $m = (y_2 - y_1) / (x_2 - x_1)$
- 2) Find equation: $b = y = mx$
- 3) Use equation in blank in code
*y=ANSWER