

Must-Know

int -2,147,483,648 to +1,147,483,647

float 4bytes, contain 1 digit/decimal, +-10³⁸, 7digitsprecision, f, illegalfloats: 6.2.2f, 6.-3f, 6.2

double 8bytes, +-10³⁰⁸, 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

