

Math in C

```
set x to 1
set y to 2
set z to x + y
```

```
y = z mod x
```

```
if x < y
  change x by 1
```

Numerical Variables

`int`

`float`

`double`

`long long`

Let's add some ints!

```
// declare x
```

```
int x;
```

```
// initialize x
```

```
x = 2;
```

```
// declare and initialize y
```

```
int y = x + 1;
```

Division

```
int main(void)
{
    // declare and initialize answer
    float answer = 1 / 10;

    // print answer to two decimal places
    printf("%.2f\n", answer);
}
```

Fixed version: Typecasting

```
int main(void)
{
    // declare and initialize answer
    float answer = (float) 1 / (float) 10;

    // print answer to two decimal places
    printf("%.2f\n", answer);
}
```

Another way

```
int main(void)
{
    // declare and initialize answer
    float answer = 1.0 / 10.0;

    // print answer to two decimal places
    printf("%.2f\n", answer);
}
```

Operator Precedence

What is x?

1. `int x = 2 * 10 + 10 / 2 + 2;`

2. `int x = 2 * (10 + 10) / 2 + 2;`

3. `int x = 2 * (10 + 10) / (2 + 2);`

Modulo

1. $55 \% 10$

2. $3 \% 5$

3. $8 \% 8$

4. $16 \% 15$

What will print?

```
int main(void)
{
    // declare and initialize x, y, z
    int x = 1;
    int y = 2;
    int z = (x + y) * y % y + y;

    // print z
    printf("%i\n", z);
}
```

Floating Point Imprecision

```
int main(void)
{
    // initialize x and y
    float answer = 1.0 / 10.0;

    // print answer to two decimal places
    printf("%.20f\n", answer);
}
```