This is CS50.

cs50.brianyu.me

Week 1

- C
- Compiling
- Strings
- Variables
- Types
- Loops
- Conditions
- Imprecision
- Overflow

What questions do you have?

Today

Variables and Types

Loops, Conditions, Functions

Lab

Part One
Variables and Types

```c
#include <stdio.h>

int main(void)
{
    printf("hello, world\n");
}
```

Variables

```
int x = 28;
```

Variables

```
int x = 28;
```

variable
name

Variables

```
int x = 28;
```
type

Variables

```
int x = 28;
        value
```

Variables

```
int x = 28;
```

Variables

```
int x = 28;
```

x

28

Variables

```
int x = 28;
x = 50;
```

x

28
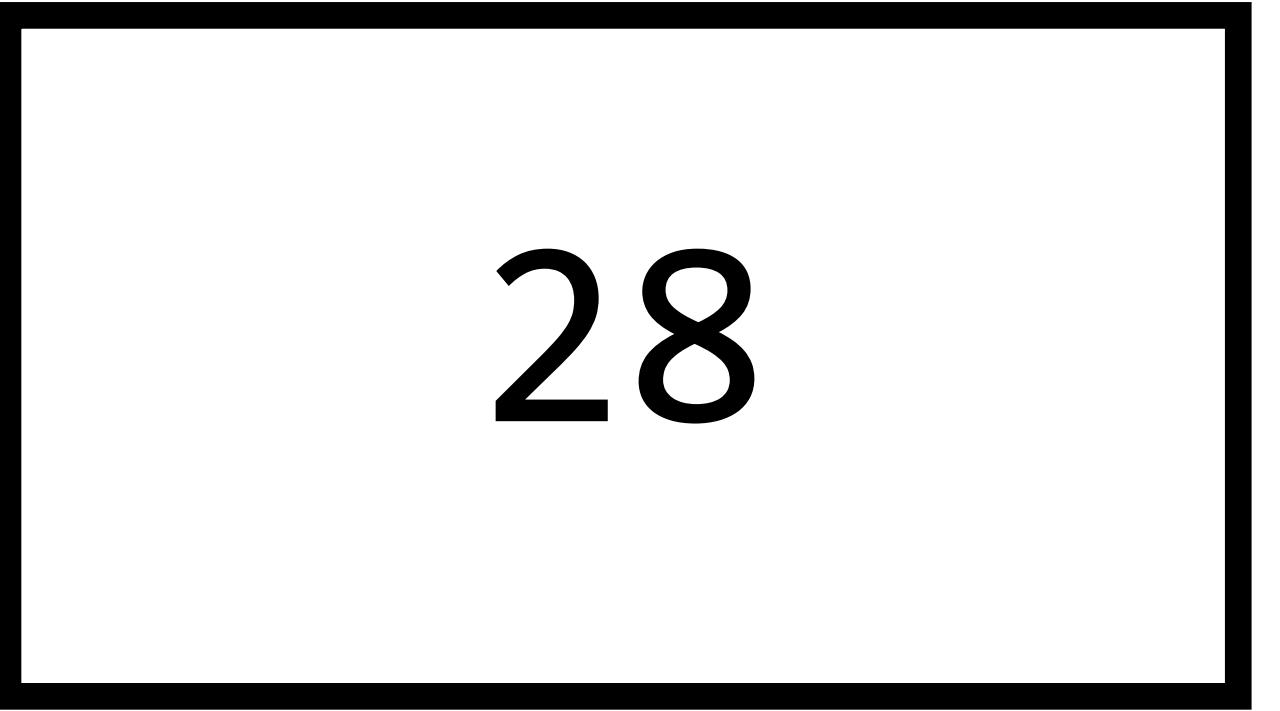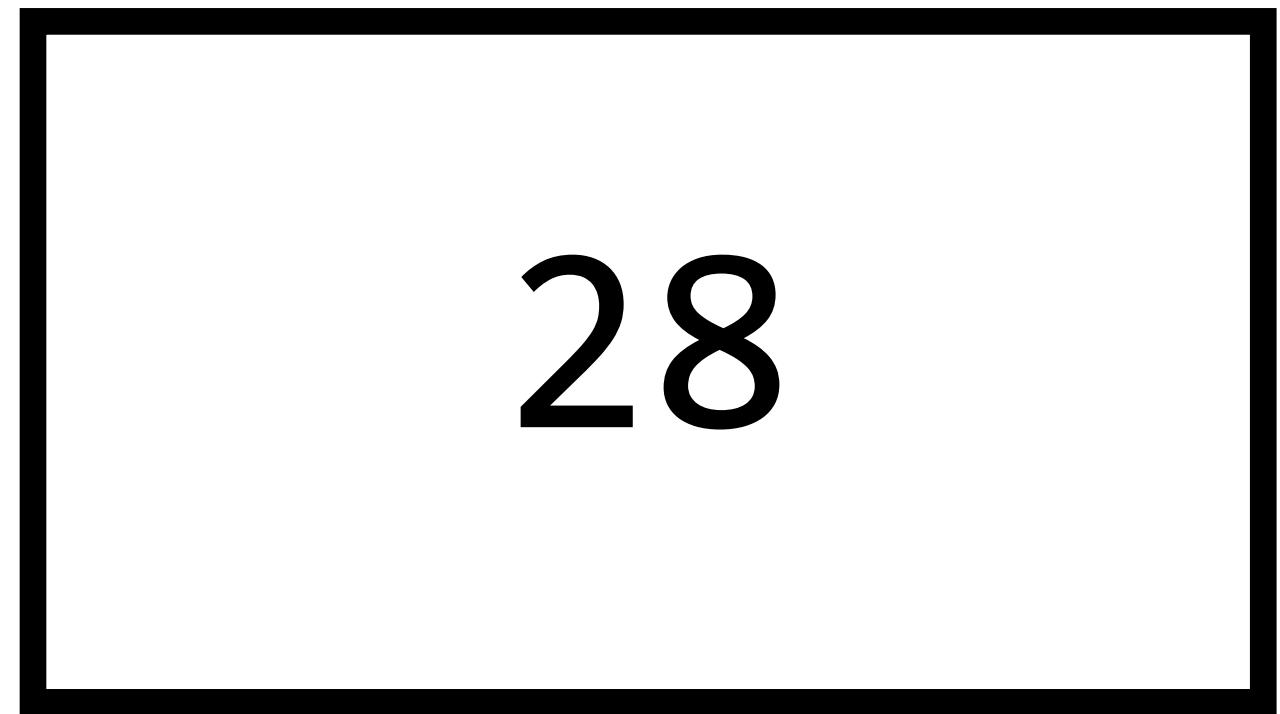
Variables

```
int x = 28;
x = 50;
```

x

50

Variables

```
int x = 28;
x = 50;
x = x + 1;
```

x

```
50
```

Variables

```
int x = 28;
x = 50;
x = x + 1;
```

x

51
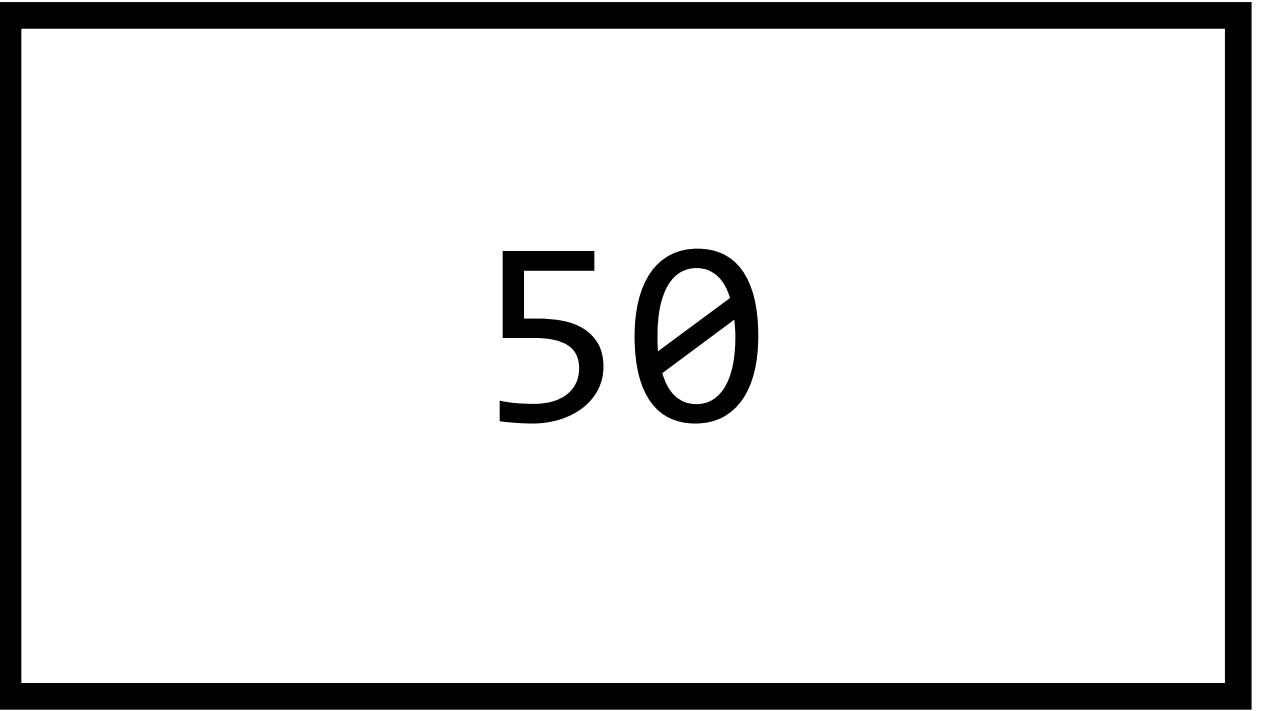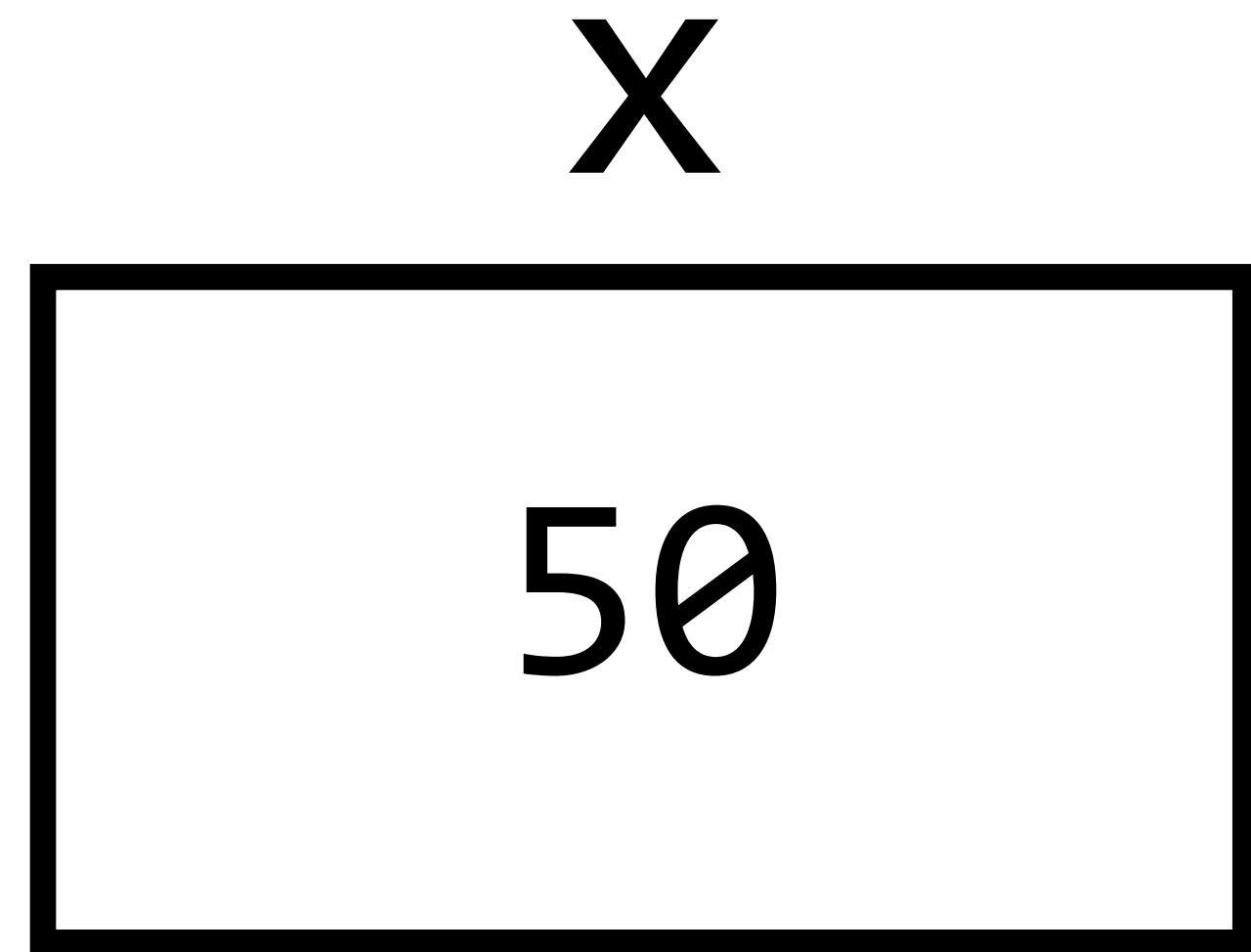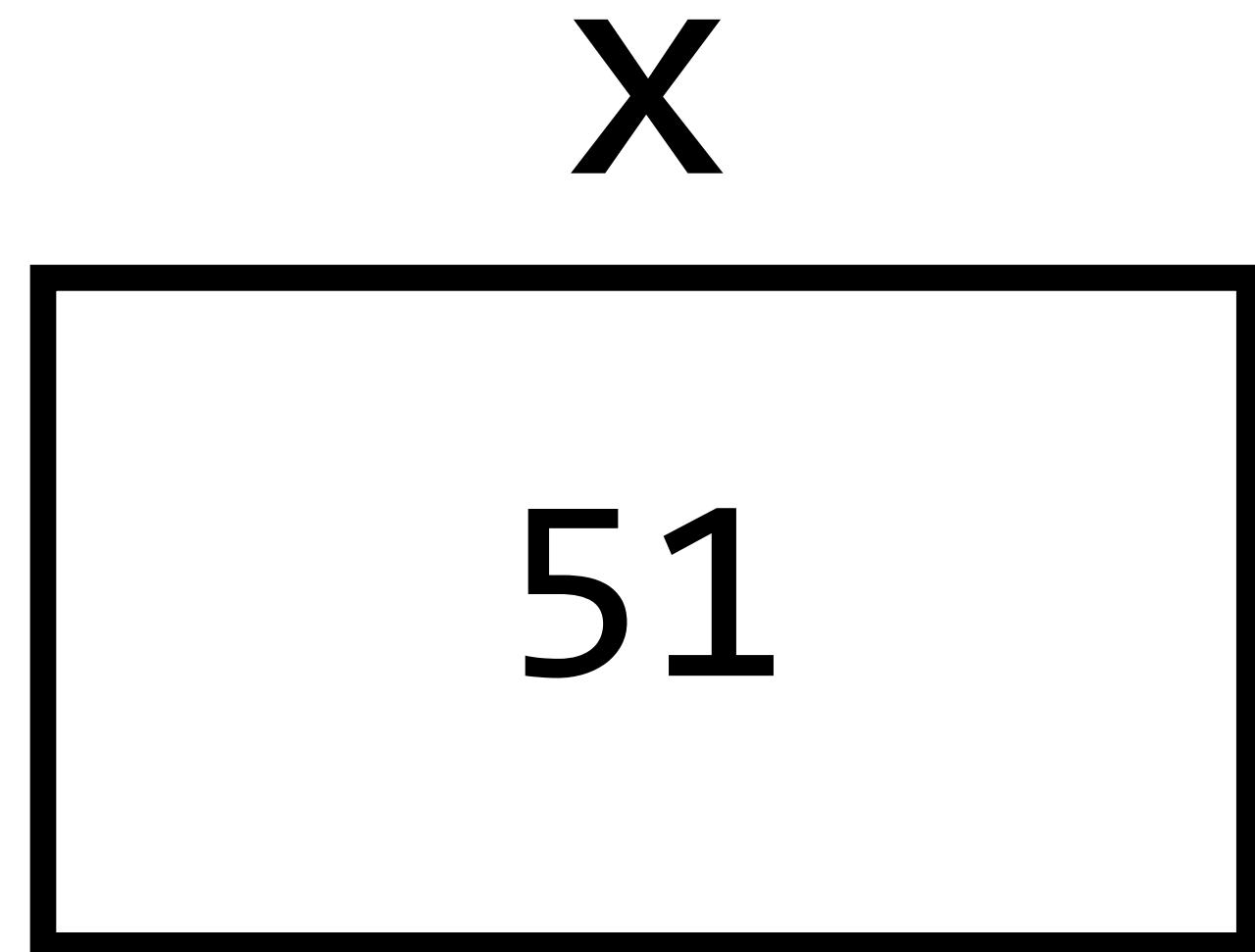
Variables

```
int x = 28;
x = 50;
x += 1;
```

x

51
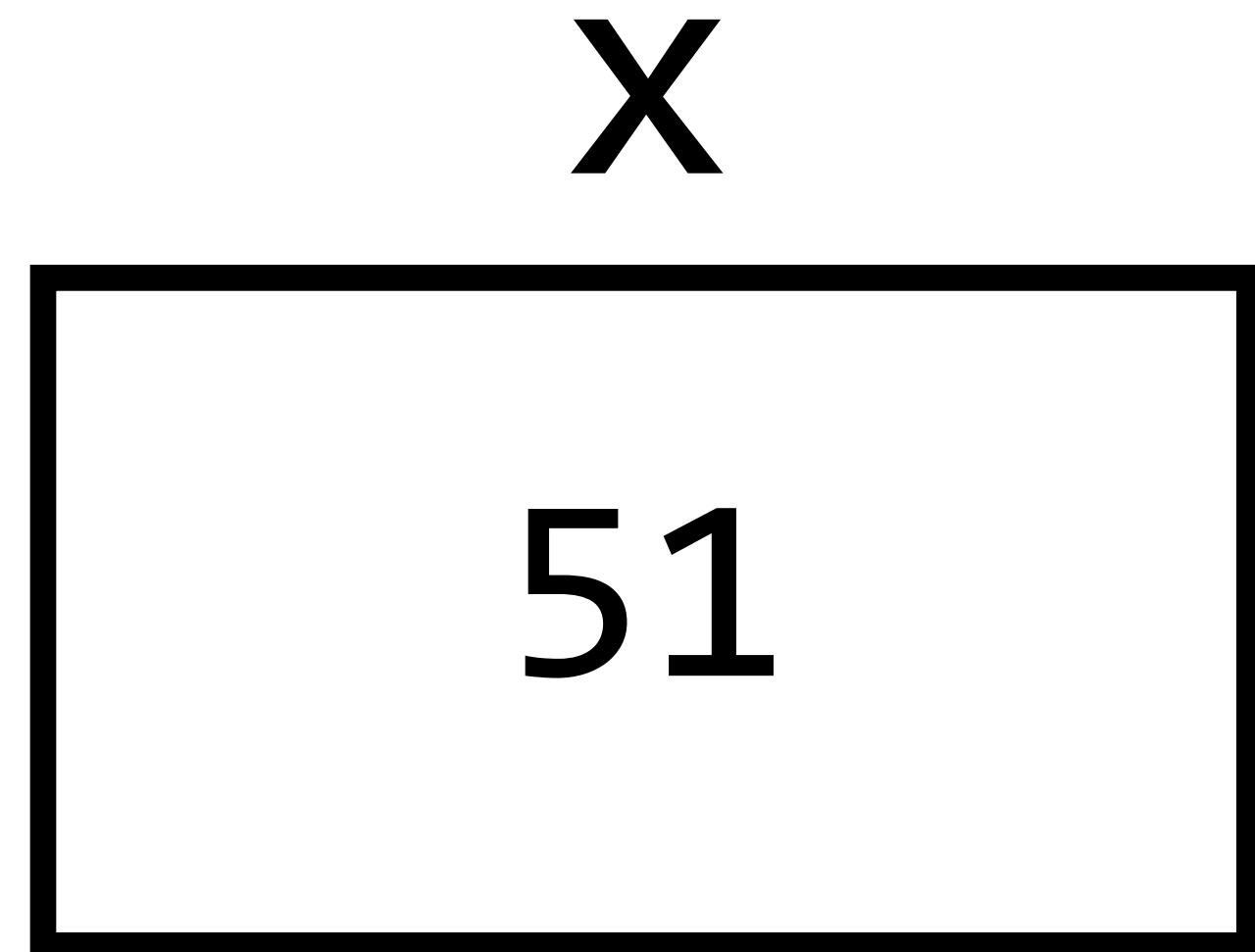
Variables

```
int x = 28;
x = 50;
x++;
```

x

51

Types

- bool
- char
- double
- float
- int
- long
- string
- ...

Getting Input

```
int x = get_int("Number: ");
```

Printing Values

```
printf("Hello, world!");
```

Printing Values

```c
int x = 50;
printf("The value is %i", x);
```

Operators

```
int x = 10 + 4;
```

x
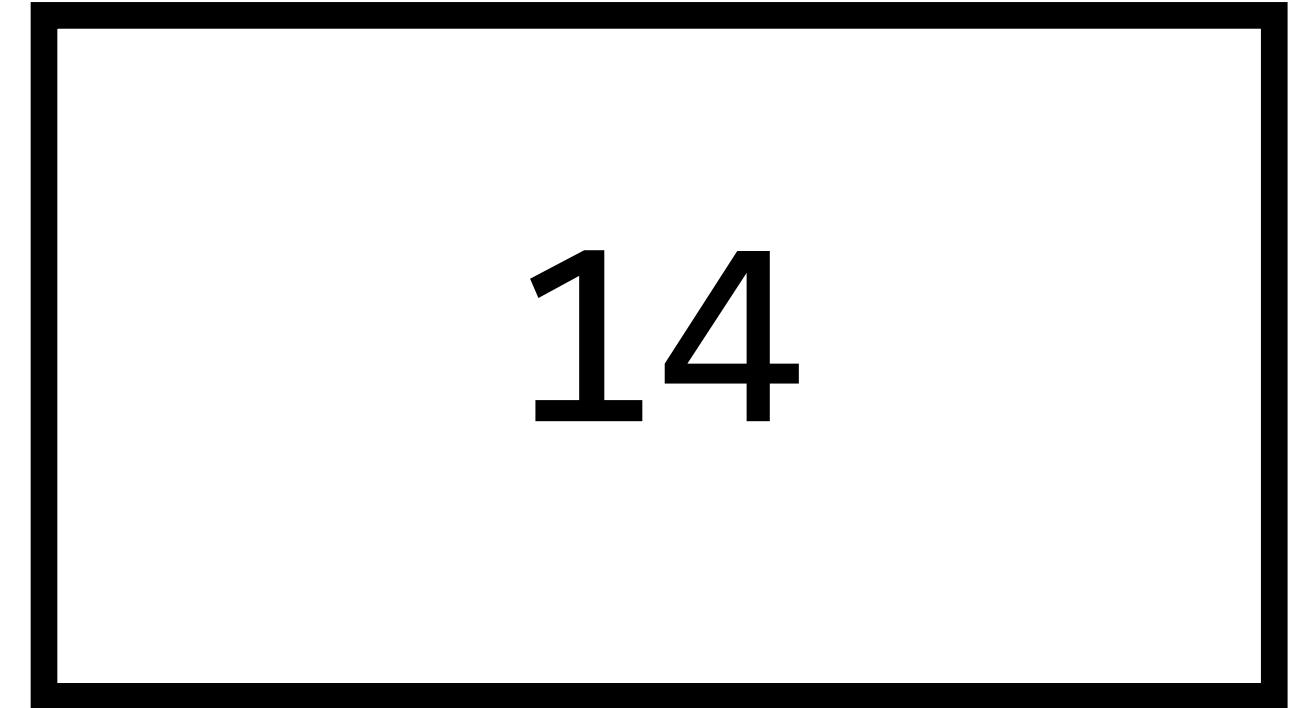
14

Operators

```
int x = 10 - 4;
```

x
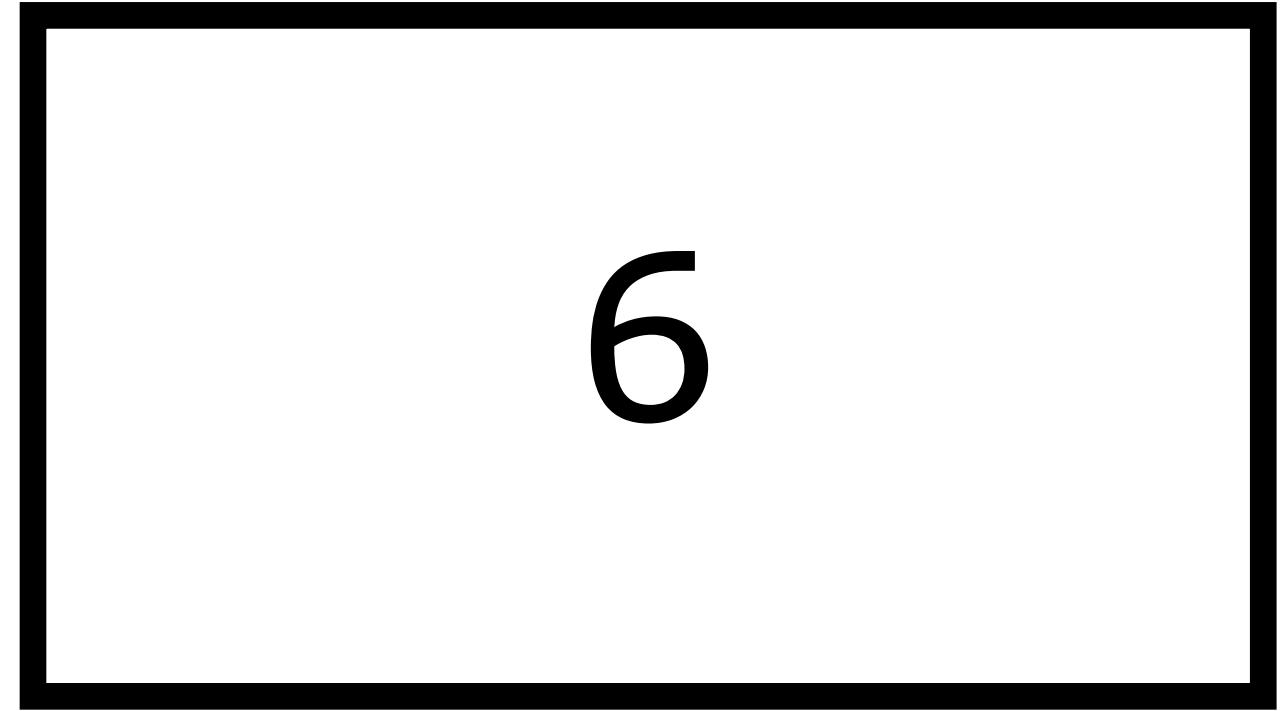
6

Operators

```
int x = 10 * 4;
```

x

```
40
```
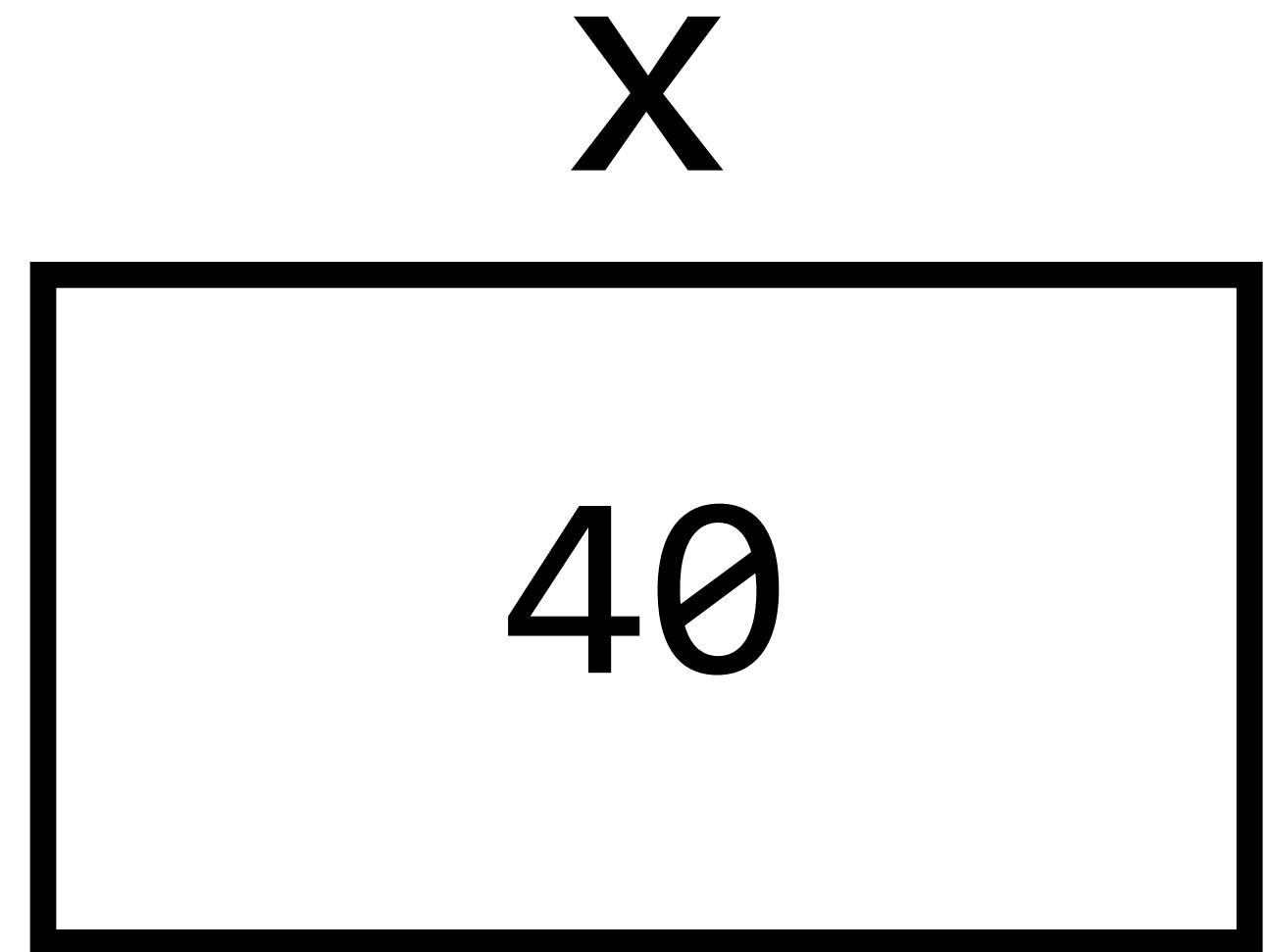
Operators

```
int x = 10 / 4;
```

x

2

Operators

```
float x = 10.0 / 4.0;
```

x

```
2.5
```
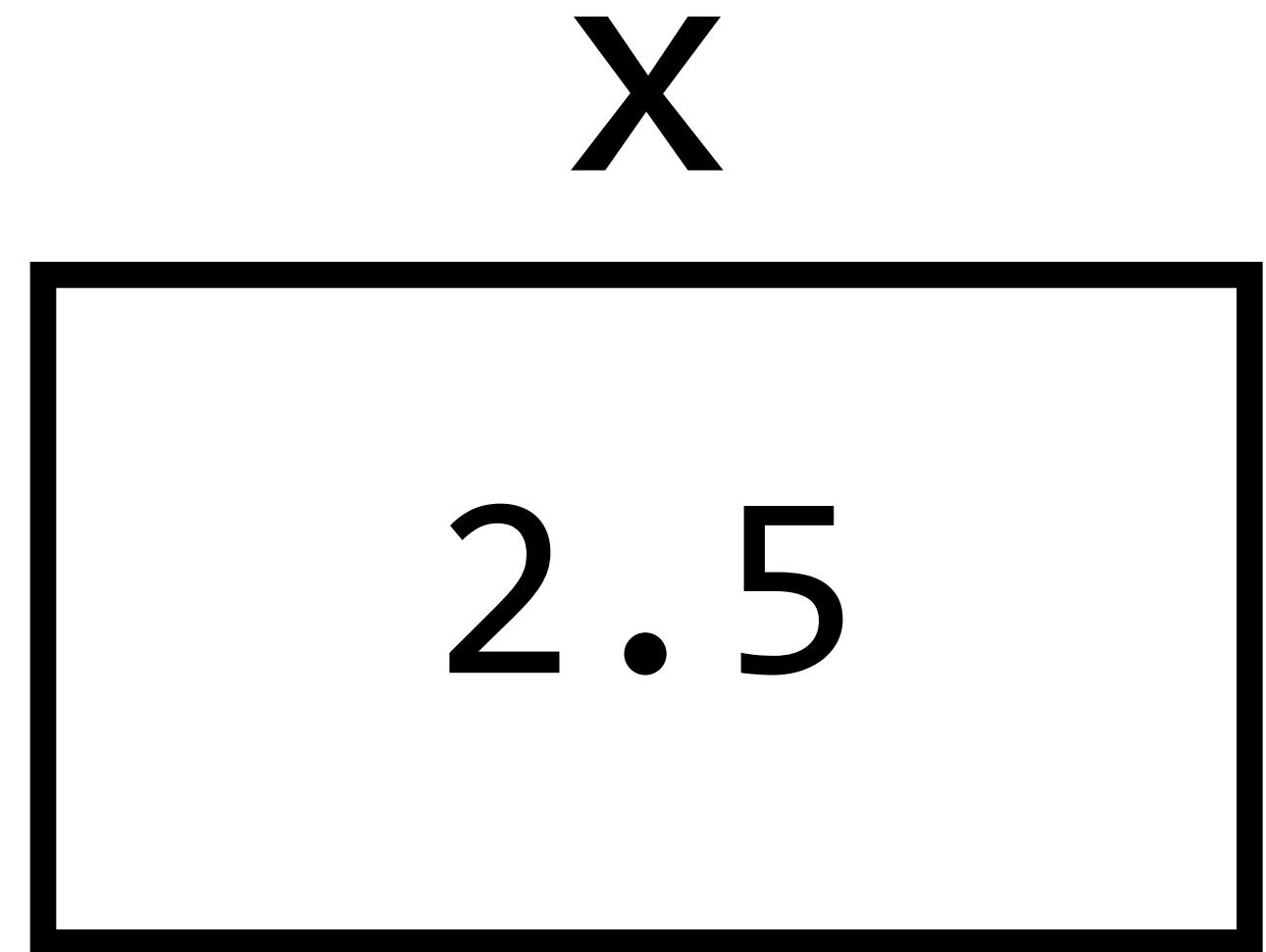
CS50 IDE

Loops, Conditions, and Functions

Conditions

```c
if (x > 0)
{
  printf("x is positive\n");
}
```

Conditions

```c
if (x > 0)
{
    printf("x is positive\n");
}
else
{
    printf("x is not positive\n");
}
```

Conditions

```c
if (x > 0)
{
    printf("x is positive\n");
}
else if (x < 0)
{
    printf("x is negative\n");
}
else
{
    printf("x is 0\n");
}
```

Loops

```c
int x = 0;
while (x < 10)
{
    printf("%i\n", x);
    x++;
}
```

Loops

```
for (int i = 0; i < 10; i++)
{
    printf("%i\n", i);
}
```

Loops

initialization

↓

```c
for (int i = 0; i < 10; i++)
{
    printf("%i\n", i);
}
```

Loops

condition

```
for (int i = 0; i < 10; i++)
{
    printf("%i\n", i);
}
```

Loops

increment

```c
for (int i = 0; i < 10; i++)
{
    printf("%i\n", i);
}
```

Loops

```
for (int i = 0; i < 10; i++)
{
    printf("%i\n", i);
}
```

PART THREE
Lab

Problem Set 1

Problem Set 1

- Hello
- One of:
  - Mario (Less)
  - Mario (More)
- One of:
  - Cash
  - Credit

This is CS50.