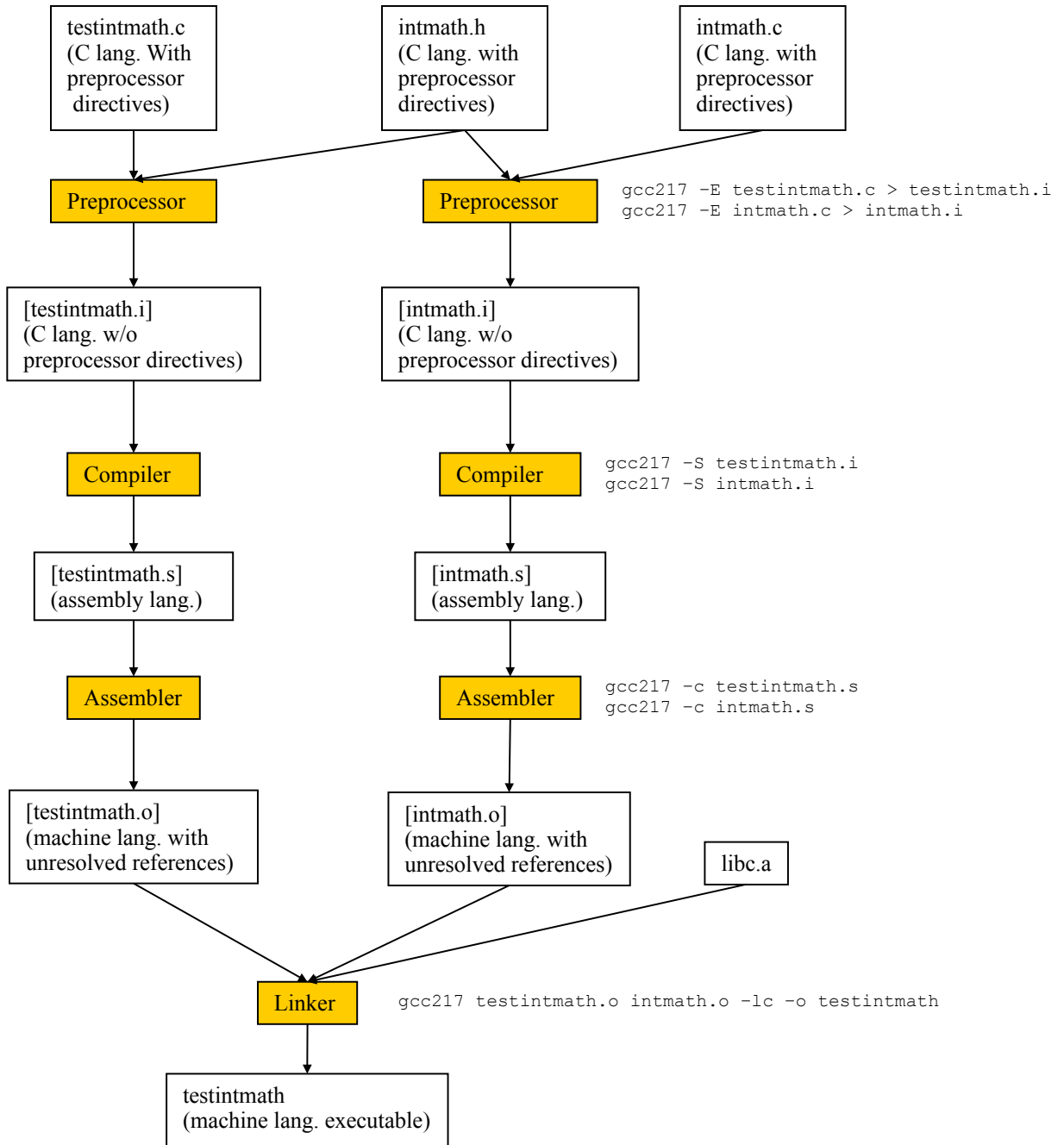# Princeton University
COS 217: Introduction to Programming Systems
Building Multi-File C Programs

testintmath.c
(C lang. With
preprocessor
directives)

intmath.h
(C lang. with
preprocessor
directives)

intmath.c
(C lang. with
preprocessor
directives)

Preprocessor

Preprocessor

```
gcc217 -E testintmath.c > testintmath.i
gcc217 -E intmath.c > intmath.i
```

[testintmath.i]
(C lang. w/o
preprocessor directives)

[intmath.i]
(C lang. w/o
preprocessor directives)

Compiler

Compiler

```
gcc217 -S testintmath.i
gcc217 -S intmath.i
```

[testintmath.s]
(assembly lang.)

[intmath.s]
(assembly lang.)

Assembler

Assembler

```
gcc217 -c testintmath.s
gcc217 -c intmath.s
```

[testintmath.o]
(machine lang. with
unresolved references)

[intmath.o]
(machine lang. with
unresolved references)

libc.a

Linker

```
gcc217 testintmath.o intmath.o -lc -o testintmath
```

testintmath
(machine lang. executable)

Shortcut:
```
gcc217 testintmath.c intmath.c -o testintmath
```

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