

Garfield AP CS

Nested loops, complex figures

Assignment 1

- Overall great.
- Get used to good indentation as you code.
- Review coding standards! I'll mark off next time.
- Class/file name **MUST** match what I ask for.
- Always better to turn something in

Complex figures

- **ASCII art?!**
 - Real graphics are a pain (we'll get there)
 - We can focus on algorithms
- **Algorithm**
 - Unambiguous set of steps
 - Try to make it as elegant and compact as possible



Reusing work

- Draw these two

```
drawCone()
```

```
*****  
*****  
*****  
***  
***  
*
```

```
drawTower()
```

```
 *  
***  
*****  
*****  
*****
```

Scaling figures

- What if we want a 3-line cone?

```
* * * * *  
* * *  
*
```

Magic numbers

- Numbers that don't have an immediately obvious source or use
- Equation to print out stars
- Best to avoid for readability

Class Constants

- Named value that cannot be changed
- Replaces magic numbers
- Uses the final keyword
- Declared outside of methods
- Name in ALL_CAPS with underscores

```
public static final int SIZE = 5;
```

Let's draw this

A mirror of size 4:

```
#=====#  
|           <><>           |  
|           <>...<>           |  
|           <>.....<>           |  
| <>.....<>           |  
| <>.....<>           |  
|           <>.....<>           |  
|           <>...<>           |  
|           <><>           |  
#=====#
```

A mirror of size 3:

```
#=====#  
|           <><>           |  
|           <>...<>           |  
| <>.....<>           |  
| <>.....<>           |  
|           <>...<>           |  
|           <><>           |  
#=====#
```