

### Short Answer:

1. What will a picture look like if, in my loop, I use the following code?  

```
setGreen(p,getGreen(p)*0.25)
setBlue(p,getBlue(p)*0.25)
```
2. Name the two functions required to create a picture object in JES that we can manipulate.
3. What should the following lines of code say? As they are they waste time and are inefficient. Assume we have already declared `r = getRed(p)`.  

```
setRed(p, r*1.0)
setRed(p, r - r)
setRed(p, r + 0)
```
4. Assume we have a function called `awesomeFunction(pic)` written in our `.py` file. If we then create a picture in the command area in the bottom of JES with the following lines of code and run it, will it work? Why or why not?  

```
file = pickAFile()
myPicture = makePicture(file)
awesomeFunction(myPicture)
```

### Picture Functions with Conditionals:

When we manipulate pictures, we may want to use conditional statements like `if`, `elif`, and `else` to decide which pixels we want to change. Below is the beginning of a function that performs a manipulation on the colors if they meet certain criteria. Fill in the rest given the following constraints:

1. If the blue value is less than 90, swap the red and blue values of that pixel.
2. If the red value is greater than 80 and less than or equal to 167, set the red to the green value.
3. If the green value is greater than 130, set the green value to 130.

```
def mixItUp(picture):
    for p in getPixels(picture):
        r = getRed(p)
        g = getGreen(p)
        b = getBlue(p)

        if (r >= 90):
```

```
    setRed(p, 255)
  if ...
```

### **Nested For Loops:**

The following two sections of code perform the same exact function. Why? And why might we want to do it the second way?

```
for p in getPixels(pic):
    setRed(p,0)
```

```
for x in range(0,getWidth(pic)):
    for y in range(0,getHeight(pic)):
        p = getPixel(pic,x,y)
        setRed(p,0)
```