1. What does RGBA stand for?

RGBA stands for "Red Green Blue Alpha." It is a color model used in digital imaging and computer graphics to represent colors and their transparency levels. The "A" in RGBA stands for "Alpha," which represents the transparency or opacity of the color.

2. From the Pillow module, how do you get the RGBA value of any images?

It can be done using .getpixel() after converting image in rgba format.

```
from PIL import Image

image_path = "sample_image.jpg"
image = Image.open(image_path).convert('RGBA')

x = 150
y = 100

rgba_value = image.getpixel((x, y))
print(f"RGBA value : {rgba_value}")
```

```
RGBA value : (40, 47, 99, 255)
```

3. What is a box tuple, and how does it work?

A box tuple, often referred to as a bounding box or rectangle tuple, is a common way to represent a rectangular region or area within an image. It is usually defined by a tuple containing four values: (left, upper, right, lower) or (x1, y1, x2, y2)

4. Use your image and load in notebook then, How can you find out the width and height of an Image object?

```
from PIL import Image

image_path = "sample_image.jpg"
image = Image.open(image_path)

width, height = image.size

print("Image Width:", width)
print("Image Height:", height)
```

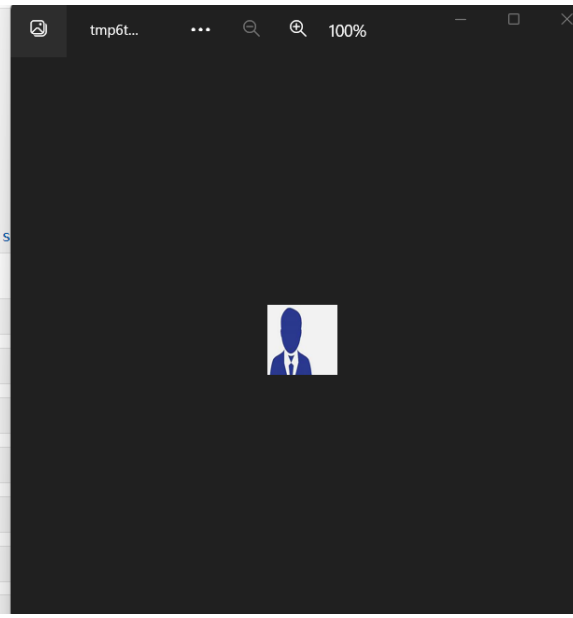
```
Image Width: 288
Image Height: 180
```

5. What method would you call to get Image object for a 100×100 image, excluding the lower-left quarter of it?

crop() method would be called with left=25 and bottom=75 keeping right=100 and top =0

```
from PIL import Image

image_path = "sample_image.jpg"
original_image = Image.open(image_path).resize((100,100))
box = (25,0, 100, 75)

cropped_image = original_image.crop(box)
cropped_image.show()

print(f'Original_Image_size :{original_image.size}   Cropped_Image_size : {cropped_image.s
```

```
Original_Image_size :(100, 100)   Cropped_Image_size : (75, 75)
```



6. After making changes to an Image object, how could you save it as an image file?

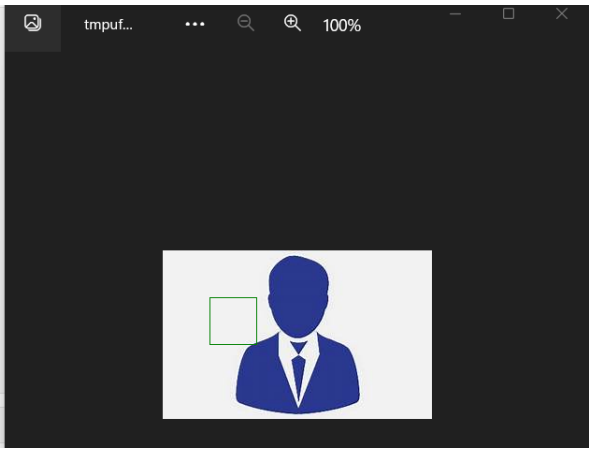
It could be done using image.save(save_path).

```
from PIL import Image

image_path = "sample_image.jpg"
original_image = Image.open(image_path).resize((100,100))
box = (25,0, 100, 75)

cropped_image = original_image.crop(box)
save_path="modified.jpg"
cropped_image.save(save_path)
```

7. What module contains Pillow's shape-drawing code?

ImageDraw module contains pillow's shape-drawing code

```
from PIL import Image, ImageDraw


image_path = "sample_image.jpg"
image = Image.open(image_path)


draw = ImageDraw.Draw(image)


rectangle_coords = (50, 50, 100, 100)

draw.rectangle(rectangle_coords, outline="green")

image.show()
```



8. Image objects do not have drawing methods. What kind of object does? How do you get this kind of object?

ImageDraw objects have drawing methods. We can get this kind of object by passing image as argument in Draw method of ImageDraw.

```
from PIL import Image, ImageDraw


image_path = "sample_image.jpg"
image = Image.open(image_path)


draw = ImageDraw.Draw(image)
```