## Exercise Solutions:

1) The function `mystery` is defined below. What value is returned by `mystery(1)`? What are *all* of the possible return values of this function?

```
int mystery(int x) {
    return min(10, max(0, 2*x));
}
```

`mystery(1)` returns `min(10, max(0, 2))` = `min(10, 2)` = 2.
All possible values are: 0, 2, 4, 6, 8, 10.

2) We've written a function that draws a cross. The plot below is the result of calling `cross(2, 5, 3, 4)`. On the same plot, draw the result of calling `cross(10, 10, 8, 6)`.
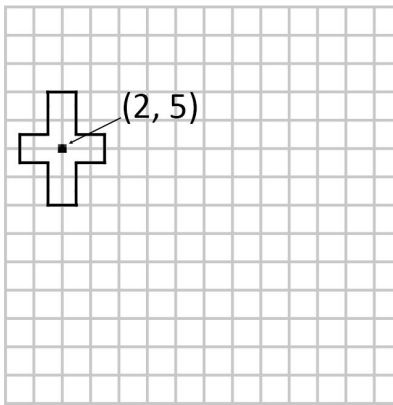
We can infer from the given drawing that the parameters to `cross()` represent the center x-position, center y-position, width, and height, in that order.

3) Write a Processing function below that computes and returns the average of 3 given numbers.
Hint: this function should take three `float`s as arguments.

```
float average_of_three(float a, float b, float c) {
    return (a + b + c) / 3;
}
```

4) Write a Processing function below that, when given two coordinates `(x1,y1)` and `(x2,y2)`, draws a line segment between the coordinates, places a point at the midpoint, and returns the length of the line segment.

Hint 1: The commands `sq()` and `sqrt()` compute the square and square root of a number, respectively.
Hint 2: What should the data type of the return value be?

```
float draw_line(int x1, int y1, int x2, int y2) {
    line(x1, y1, x2, y2);
    point((x1 + x2) / 2, (y1 + y2) / 2);
    return sqrt(sq(x1 - x2) + sq(y1 - y2));
}
```