

Exercises Solutions:

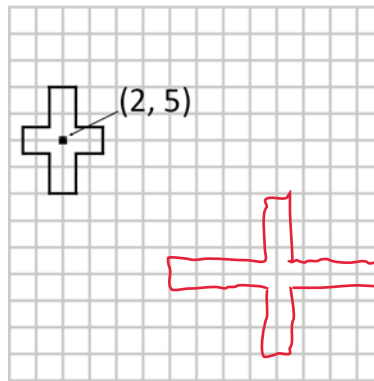
- 1) The function `mystery` is defined below. What value is returned by `mystery(1)`? What are *all* of the possible return values of this function?

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

`mystery(1)` returns 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)`.



centered at (10,10)
with width 8 and height 6

- 3) Write a Processing function below that computes and returns the average of 3 given numbers.

```
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 (x_1, y_1) and (x_2, y_2) , 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));  
}
```