

Note: this is how you rotate the text `outputScr.text(200, 200, "text", 90)`  
 (x, y, "text", angle at which turns)

```

4  * Write a description of class here. HW_Fundamentals_VincentNguyen
5  * We are making a 400 by 400 like a black and white checkered board
6  *
7  * @author (Vincent Nguyen)
8  * @version (a version number or a date)
9  */
public class HW_Fundamentals_VincentNguyen

```

HW must be handwritten on a separate sheet of paper that is scanned.

Coding HW must have

- Handwritten part
- Line numbered Java file
- Must use 400 x 400 scale unlike previous semesters
- Output screen with your name
- Graphics,x,y,width, height must not "hide" defects outside of the screen
- Should use the "TemplatesS":

## Graphics problem

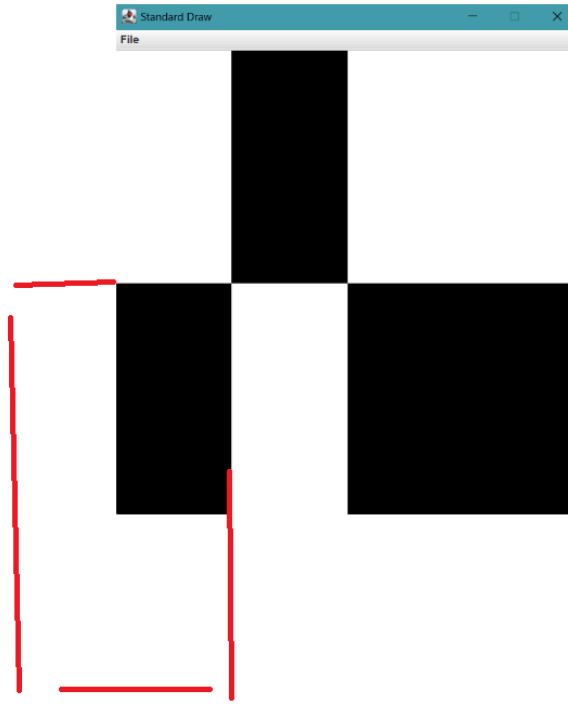
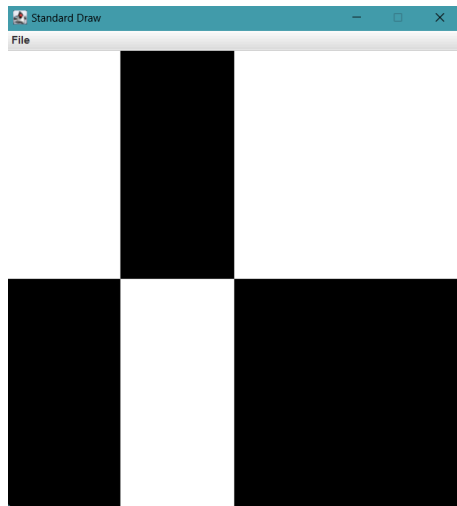
```

20 Draw scr = new Draw();
21
22 // Set the whole screen to white
23 scr.clear(Draw.WHITE);
24
25 // Set the parameters of the screen size
26 scr.setXscale(0, 400);
27 scr.setYscale(400, 0);
28
29 // Big Black Square top left
30 scr.setPenColor(Draw.BLACK);
31 scr.filledSquare(325, 325, 125);
32
33 // Big Black Square middle
34 scr.filledSquare(100, 100, 100);
35
36 // Small White Squares top left (Overlaps top left square)
37 scr.setPenColor(Draw.WHITE);
38 scr.filledSquare(50, 50, 50);
39 scr.filledSquare(50, 150, 50);
40
41 // Small Black Squares bottom left
42 scr.setPenColor(Draw.BLACK);
43 scr.filledSquare(50, 250, 50);
44 scr.filledSquare(50, 350, 50);

```

`scr.filledRectangle(0, 400, 100, 200)`

This creates a rectangle that may look correct, but extends outside the screen and is inaccurate.

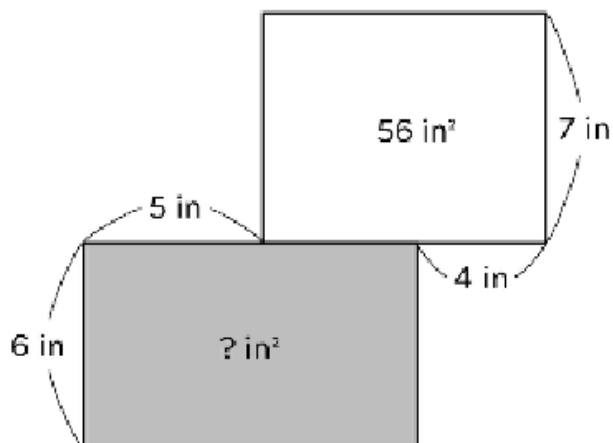


New command  
`outputScr.pause(2000)`  
 - Means wait two seconds

Solve this using ONLY integers (Puzzle 3)

Plain English: There is a top and bottom rectangle. The bottom height is 6. The top height is 7.

**Solve this using ONLY integers (Puzzle 3)**



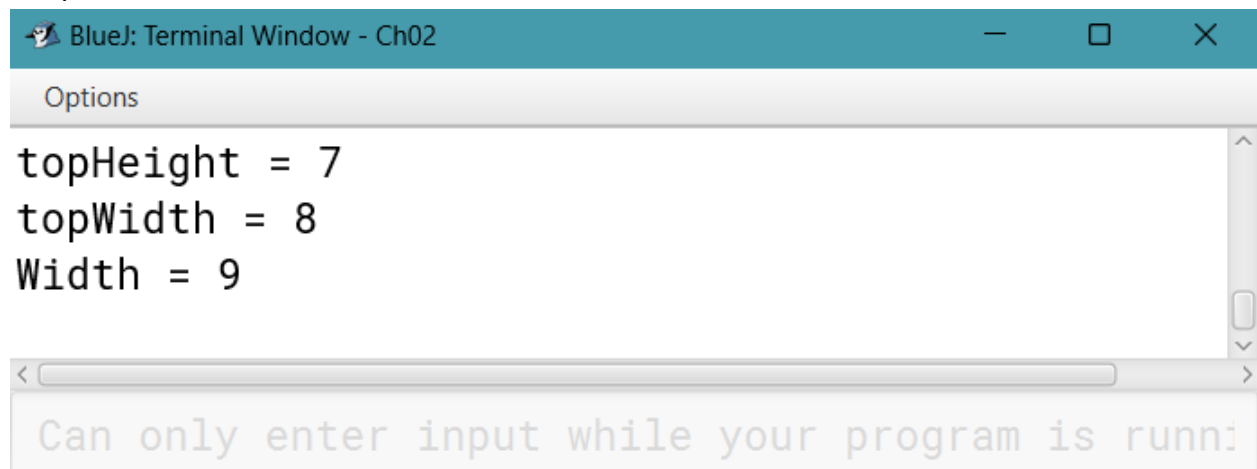
This means we can find the top width because  $56 / \text{topHeight}$  is the topWidth because  $56 / \text{topHeight}$  is the topWidth. Now we can find the bit Width by  $5 + (\text{topWidth} - 4)$ . Finally . . . .

I wasnt able to solve

```
1 /**
2  * Description
3  * -----
4  * -----
5  * @author Vincent Nguyen
6  * @version 09/03/24
7  */
```

```
9 public class Puzzles2VincentNguyen
10 {
11     public static void main(String[] args)
12     {
13     }
14
15     public static void puzzle3()
16     {
17         int topHeight, topWidth, mbotArea, topArea, botHeight, Width;
18         topArea = 56;
19         topHeight = 7;
20         botHeight = 6;
21         topWidth = 56 / topHeight;
22         Width = 5 + (topWidth - 4);
23         System.out.println("topHeight" + topHeight);
24         System.out.println("topWidth" + topWidth);
25         System.out.println("Width" + Width);
26     }
27 }
```

## Output

A screenshot of a BlueJ Terminal Window titled "BlueJ: Terminal Window - Ch02". The window has a teal header bar with standard window controls. Below the header is a tab labeled "Options". The main text area displays the output of a program: "topHeight = 7", "topWidth = 8", and "Width = 9". A scrollbar is visible on the right side of the text area. At the bottom of the window, a grey status bar contains the text "Can only enter input while your program is running".

```
BlueJ: Terminal Window - Ch02
Options
topHeight = 7
topWidth = 8
Width = 9
Can only enter input while your program is running
```

This is how I will format this from now on.

```
/**
 * Description
 * This is a small program that calculates
 * the discount from a sale
 * -----
 * @author Vincent Nguyen
 * @version 09/03/24
 */
public class DiscountVincentNguyen
{
```

We looked at DiscountYName.java.

New guidelines: "123" are parts of the code you have to comments and code around it

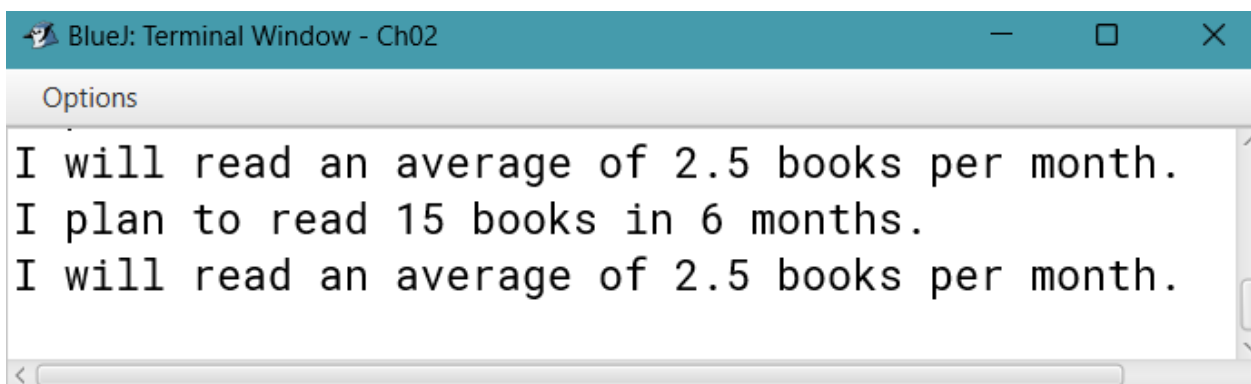
```
17 public static void Discount()  
18 {  
19     double salePrice;  
20     double discount;  
21     double discountedPrice;  
22     double regularPrice = 59.0;  
23  
24     // Calculate the amount of a 20% discount  
25     discount = 0.2;  
26     discountedPrice = regularPrice * discount;  
27  
28     //Calculate the sale price by subtracting  
29     // the discount from the regular price.  
30     salePrice = regularPrice - discountedPrice;  
31  
32  
33     // Display the results  
34     System.out.println("Regular price: $" + regularPrice);  
35     System.out.println("Discounted price:$" + discount);  
36     System.out.println("Sale price:$" + salePrice);  
37  
38 }  
39  
40 }
```

Output from the code

```
Sale price:$47.2  
Regular price: $59.0  
Discounted price:$0.2  
Sale price:$47.2
```

Can only enter input while your progr

```
11 public class BooksPerMonthVincentNguyen
12 {
13     public static void books( )
14     {
15         int books = 15, // Number of books to read
16         months = 6; // Number of months to read them
17
18         double booksPerMonth; // Average books per month
19         // Display the number of books I plan to
20         // read and the number months in which I
21         // plan to read them.
22
23         System.out.print("I plan to read ");
24         System.out.print(books + " books in ");
25         System.out.println(months + " months.");
26
27         // Calculate the average books per month.
28         booksPerMonth = (double) books / months;
29         // Display the average number of books per month.
30
31         System.out.print("I will read an average of ");
32         System.out.print(booksPerMonth);
33         System.out.println(" books per month.");
```



The screenshot shows a terminal window titled "BlueJ: Terminal Window - Ch02". Below the title bar is a tab labeled "Options". The terminal displays the output of the Java program, which consists of three lines of text: "I will read an average of 2.5 books per month.", "I plan to read 15 books in 6 months.", and "I will read an average of 2.5 books per month." The text is displayed in a monospaced font, and there is a horizontal scrollbar at the bottom of the terminal area.

We did three of the code from canvas

We looked at the contribution program

```
1  /**
2  * Description
3  * This program calculates the amount of pay that
4  * will be contributed to a retirement plan if 5%,
5  * 8%, or 10 % of monthly pay is withheld.
6  * ref: pg -----
7  * @author Vincent Nguyen
8  * @version 09/03/24
9  */
10 public class ContributionVincentNguyen
11 {
12     public static void main(String[] args)
13     {
14         // Variables to hold the monthly pay and
15         // the amount of contribution.
16         int monthlyPay = 6000;
17         double contribution;
18
19         // Calculate and display a 5% contribution.
20         contribution = monthlyPay * 0.05;
21         System.out.println("5 percent is $" +
22             contribution +
23             " per month.");
24     }
```



```
// Calculate and display a 8% contribution.
26 contribution = monthlyPay * 0.08;
27 System.out.println("8 percent is $" +
28 contribution +
29 " per month.");
30
31 // Calculate and display a 10% contribution.
32 contribution = monthlyPay * 0.1;
33 System.out.println("10 percent is $" +
34 contribution +
35 " per month.");
36 }
37 }
38 //Expected output =====
39 //5 percent is $300.0 per month.
40 //8 percent is $480.0 per month.
41 //10 percent is $600.0 per month.
```

BlueJ: Terminal Window - Ch02

Options

```
5 percent is $300.0 per month.
8 percent is $480.0 per month.
10 percent is $600.0 per month.
```

Can only enter input while your program is running