

Multiple Choice: /* 3 points each */

_____ 1. Which of these Processing expressions generates a random value from 17 up to but not including 24?

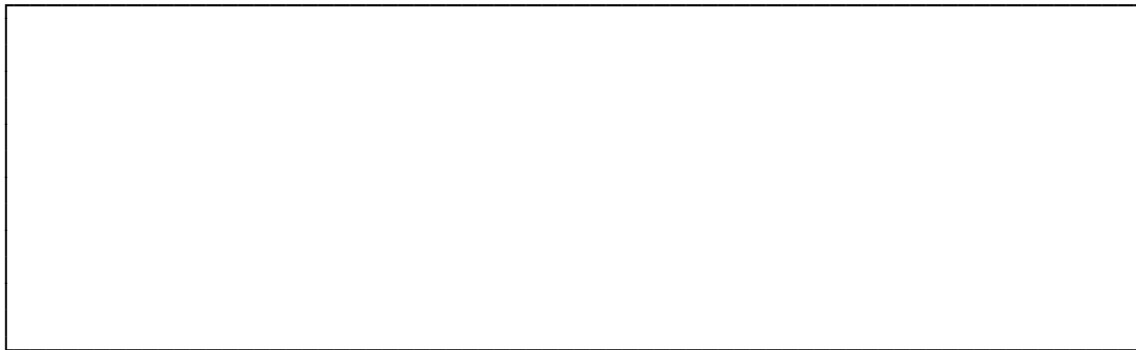
- A) random(17, 23)
- B) random(17, 24)
- C) random(0, 6) + 17

- D) random(0, 7) + 17
- E) Both expression A and expression C do this
- H) Both expression B and expression D do this

Short Answer:

1. The box below represents the output window for a Processing program. Draw a rectangle inside the box that shows the location, the width and the height of the image displayed by the following Processing code: /* 7 points */

```
size( 500, 120 );  
image( img1, 400, 0, 100, 60 );
```



2. Describe in English what happens when the following program is executed, and the timing of what happens: /* 7 points */

```
void draw() {  
  background(0);  
  int currentTime = millis();  
  
  if ( currentTime > 3000 ) {  
    background( 0 );  
    ellipse( 100, 100, 50, 50 );  
  }  
  else if ( currentTime > 1500 ) {  
    background( 0 );  
    rect( 0, 0, 50, 50 );  
  }  
}
```

Short Answer (continued):

3. Fill in the blanks in this Processing code so that it flips a coin 500 times and counts how many heads and how many tails were flipped. /* 7 points */

```
int numHeads = 0;
int numTails = 0;

for ( int flipNum = _____ ; _____ ; flipNum = _____ ) {
    float percentage = random( 0, 100 );

    if ( percentage < _____ ) {
        numHeads = numHeads + 1;
    }
    else {
        numTails = numTails + 1;
    }
}

print( "heads = " );
println( numHeads );
print( "tails = " );
println( numTails );
```