Practice with the new-expression
David Gries and Scott Wehrwein
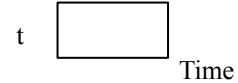
Consider class Time given below.

1. Evaluate this new-expression —the answer is given on the next page:

   new Time(3, 20)

2. Draw a variable t, as shown to the right. Then execute this assignment statement

   —the answer is given on the next page:

   t= **new** Time(67);

t
```
+-------+
|       |
+-------+
```
Time

```
/** An instance maintains the time of day.*/
public class Time {
    private int hr; // hour of the day, in 0..23
    private int min; // minute of the hours, in 0..59

    /** Constructor: instance with hour h, minute m.
     *  Precondition: h in 0..23, m in 0..59*/
    public Time(int h, int m) {
        hr= h;
        min= m;
    }

    /** Constructor: instance with minute m.
     * Precondition: 0 <= m < 24 * 60 */
    public Time(int m) {
        hr= m / 60;
        min= m % 60;
    }

    /** Return the hour of the day */
    public int getHour() {
        return hr;
    }

    /** Return the minute of the hour */
    public int getMinute() {
        return min;
    }
}
```
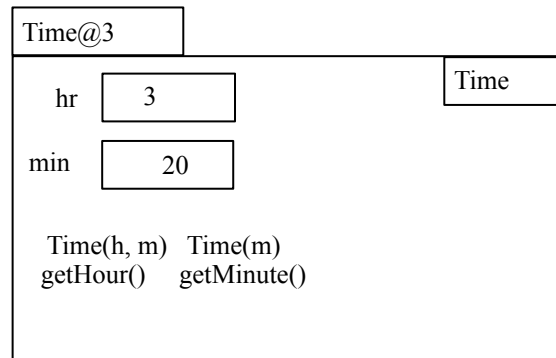
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Answer to exercise 1.

```
Time@3
┌──────────────────────────────────────────┐
│                                  Time      │
│   hr  [  3  ]                              │
│                                            │
│   min  [  20  ]                            │
│                                            │
│     Time(h, m)   Time(m)                   │
│     getHour()    getMinute()               │
│                                            │
└──────────────────────────────────────────┘
```

Answer to exercise 2.

```
Time@2                Time@2
┌──────────┐          ┌──────────────────────────────────────┐
│     Time │  ─────>  │                              Time      │
└──────────┘          │   hr  [  1  ]                          │
                      │                                        │
                      │   min  [  7  ]                         │
                      │                                        │
                      │     Time(h, m)   Time(m)               │
                      │     getHour()    getMinute()           │
                      │                                        │
                      └──────────────────────────────────────┘
```