

CSc 110, Autumn 2016

Midterm Solutions

1. Expressions

```
10
4.0
18.0
13
26.0
True
True
True
```

2. Parameter Mystery

```
he says can we yes
Barry says maybe we can
we says he we can
Sarah says no we can't
he says says we yes
```

3. If/Else Mystery

```
3 8
5 0
5 6
8 2
12 7
```

4. Programming (two solutions shown)

```
def has_odd_even(x, y, z):
    return x % 2 != y % 2 or y % 2 != z % 2

def has_odd_even(x, y, z):
    if (x % 2 == 0 and y % 2 == 0 and z % 2 == 0):
        return False
    elif (x % 2 == 1 and y % 2 == 1 and z % 2 == 1):
        return False
    else:
        return True
```

5. Programming (two solutions shown)

```
def longest_name(names):
    longest = ""
    tie = False
    for i in range(1, names + 1):
        name = input("name #" + str(i) + "? ")
        if (len(name) > len(longest)):
            longest = name
            tie = False
        elif (len(name) == len(longest)):
            tie = True
    longest = longest[0].upper() + longest[1:].lower()
    print(longest + "'s name is longest")
    if (tie):
        print("(There was a tie!)")
```

```
def longest_name(names):
    longest = input("name #1? ")
    count = 1
    for i in range(2, names + 1):
        name = input("name #" + i + "? ")
        if (len(name) == len(longest)):
            count += 1
        if (len(name) > len(longest)):
            longest = name
            count = 1
    fixed_name = longest[0].upper()
    fixed_name = fixed_name + longest[1:].lower()
    print(fixed_name + "'s name is longest")
    if (count > 1):
        print("(There was a tie!)")
```

6. Programming (five solutions shown)

```
def hopscotch(hops):
    print(" 1")
    for i in range(1, hops + 1):
        print(str(3*i - 1) + " " + str(3*i))
        print(" " + str(3*i + 1))

def hopscotch(hops):
    for i in range(0, hops):
        print(" " + str(3*i + 1))
        print(str(3*i + 2) + " " + str(3*i + 3))
    print(" " + str(3 * hops + 1))

def hopscotch(hops):
    for i in range(1, hops + 1):
        print(" " + str(3*i - 2))
        print(str(3*i - 1) + " " + str(3*i))
    print(" " + str(3*hops + 1))

def hopscotch(hops):
    for i in range(1, hops * 3 + 2):
        if (i % 3 == 1):
            print(" " + str(i))
        elif (i % 3 == 2):
            print(i, end='');
        else:
            print(" " + str(i))

def hopscotch(hops):
    print(" 1")
    num = 2
    for i in range(1, hops + 1):
        print(str(num) + " " + str(num + 1));
        print(" " + str(num + 2))
        num = num + 3
```