

# CompSci 94

## Extra Sample Exam 2 Questions

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## Practice writing code on paper

- Write the code on paper, like you will do on the exam

### Problem 1a Procedure (Rewritten Spring 18 Quest 11)

```
declare procedure mystery
with parameters: WholeNumber = num1, WholeNumber = num2, WholeNumber = num3
do in order
  if {num1} ≤ {num2} is true then
    {this} say "number is 5" add detail
  else
    if {EITHER {num1} > {num3} OR {num1} > {num2}} is true then
      {this} say "number is 6" add detail
    else
      {this} say "number is 8" add detail
```

What happens when this code runs?

```
{this.panda} mystery num1: 3, num2: 2, num3: 1
```

### Problem 1b Procedure (Rewritten Spring 18 Quest 11)

```
declare procedure mystery
with parameters: WholeNumber = num1, WholeNumber = num2, WholeNumber = num3
do in order
  if {num1} ≤ {num2} is true then
    {this} say "number is 5" add detail
  else
    if {EITHER {num1} > {num3} OR {num1} > {num2}} is true then
      {this} say "number is 6" add detail
    else
      {this} say "number is 8" add detail
```

What happens when this code runs?

```
{this.panda} mystery num1: 6, num2: 6, num3: 8
```

## Problem 1c Procedure (Rewritten Spring 18 Quest 11)

```

declare procedure mystery
with parameters: WholeNumber = num1, WholeNumber = num2, WholeNumber = num3
do in order
  if {num1} ≤ {2} is true then
    {this} say {number is 5} add detail
  else
    if {EITHER {num1} > {num3} OR {num1} > {num2}} is true then
      {this} say {number is 6} add detail
    else
      {this} say {number is 8} add detail

```

What happens when this code runs?

```

this.panda mystery num1: 0, num2: 1, num3: 3

```

## Problem 1d Procedure (Rewritten Spring 18 Quest 11)

```

declare procedure mystery
with parameters: WholeNumber = num1, WholeNumber = num2, WholeNumber = num3
do in order
  if {num1} ≤ {2} is true then
    {this} say {number is 5} add detail
  else
    if {EITHER {num1} > {num3} OR {num1} > {num2}} is true then
      {this} say {number is 6} add detail
    else
      {this} say {number is 8} add detail

```

What happens when this code runs?

```

this.panda mystery num1: 7, num2: 9, num3: 3

```

## Problem 2a (rewrite Fall 2018 Question 12)

```

declare procedure mystery2
with parameters: DecimalNumber = value, DecimalNumber = amount, Add Parameter...
do in order
  if {EITHER {value} ≥ {3.0} OR {amount} < {1.0}} is true then
    if {value} > {amount} is true then
      {this} say {1} add detail
    else
      {this} say {2} add detail
  else
    if {BOTH {value} > {2.0} AND {value} > {amount}} is true then
      {this} say {3} add detail
    else
      {this} say {4} add detail

```

What happens?

```

this.panda mystery2 value: 1.5, amount: 2.5

```

Panda says:

## Problem 2b (rewrite Fall 2018 Question 12)

```

declare procedure mystery2
with parameters: DecimalNumber = value, DecimalNumber = amount, Add Parameter...
do in order
  if {EITHER {value} ≥ {3.0} OR {amount} < {1.0}} is true then
    if {value} > {amount} is true then
      {this} say {1} add detail
    else
      {this} say {2} add detail
  else
    if {BOTH {value} > {2.0} AND {value} > {amount}} is true then
      {this} say {3} add detail
    else
      {this} say {4} add detail

```

What happens?

```

this.panda mystery2 value: 2.5, amount: 2.0

```

Panda says:

## Problem 2c (rewrite Fall 2018 Question 12)

```
declare procedure mystery2
with parameters: DecimalNumber value, DecimalNumber amount Add Parameter...
do in order
if EITHER value >= 3.0 OR amount <= 1.0 is true then
  if value > amount is true then
    this say 1 add detail
  else
    this say 2 add detail
else
  if BOTH value > 2.0 AND value > amount is true then
    this say 3 add detail
  else
    this say 4 add detail
```

What happens? `this.panda.mystery2 value: 2.0, amount: 0.5`

Panda says:

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## Problem 3a:

### Write Tortoise Procedure `paintFriend`

- This procedure has **two parameters**
  - One parameter of type **Biped** named **friend**
  - One parameter of type **Paint** named **somePaint**The tortoise and friend turn to face each other. Then the tortoise moves stopping about 0.5 units in front of the friend. Then if the tortoise is taller than the friend, the friend is painted red. Otherwise the friend is painted the color of `somePaint`.

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## Write the procedure `paintFriend`

```
declare procedure paintFriend with parameters: Biped friend, Paint somePaint Add Paramete
```

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## 3B) Calling tortoise `paintFriend` procedure

- Give the call for when the tortoise and pig are to turn and face each other, the tortoise moves over to about half a unit in front of the pig, and then if the tortoise is taller than the pig, then the pig is painted red, otherwise the pig is painted purple.

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### 3C) Calling tortoise paintFriend procedure

- Give the call for when the tortoise and bunny are to turn and face each other, the tortoise moves over to about a half a unit in front of the bunny, and then if the tortoise is taller than the bunny, then the bunny is painted red, otherwise the bunny is painted blue.