

**COMP 410**  
**Spring 2018**

**Second-Order Prolog Procedures**

For all these questions, we will make use of the following procedure:

```
example(1, 1, 2).  
example(2, 1, 1).  
example(3, 1, 2).  
example(3, 2, 2).
```

1.) What will `Answers` unify with in the following query?

```
?- findall(X, example(X, _, _), Answers).
```

2.) What will `Answers` unify with in the following query?

```
?- findall(foo(A, B, C), example(A, B, C), Answers).
```

3.) What will `Answers`, `A`, and `B` unify with in the following query?

```
?- findall(X, example(X, A, B), Answers).
```

4.) What will `Answers` unify with in the following query? Show all alternative answers, in any order you prefer.

```
?- bagof(X, A^B^example(X, A, B), Answers).
```

5.) What will `Answers` and `A` unify with in the following query? Show all alternative answers, in any order you prefer.

```
?- bagof(X, B^example(X, A, B), Answers).
```

6.) What will `Answers` and `B` unify with in the following query? Show all alternative answers, in any order you prefer.

```
?- bagof(X, A^example(X, A, B), Answers).
```

7.) What will `Answers`, `A`, and `B` unify with in the following query? Show all alternative answers, in any order you prefer.

```
?- bagof(X, example(X, A, B), Answers).
```

8.) What will `Answers` unify with in the following query? Show all alternative answers, in any order you prefer.

```
?- bagof(X, example(X, _, _), Answers).
```

9.) What will `Answers` unify with in the following query? Show all alternative answers, in any order you prefer.

```
?- bagof(foo(X, A, B), example(X, A, B), Answers).
```

10.) What will `Answers` unify with in the following query? Show all alternative answers, in any order you prefer.

```
?- bagof(bar(X, A), example(X, A, B), Answers).
```

11.) What will `Answers` unify with in the following query? Show all alternative answers, in any order you prefer.

```
?- bagof(bar(X, B), example(X, A, B), Answers).
```

12.) What will `Answers` unify with in the following query? Show all alternative answers, in any order you prefer.

```
?- bagof(bar(A, B), example(X, A, B), Answers).
```

13.) What will `Answers` unify with in the following query? Show all alternative answers, in any order you prefer.

```
?- setof(X, A^B^example(X, A, B), Answers).
```

14.) What will `Answers` and `A` unify with in the following query? Show all alternative answers, in any order you prefer.

```
?- setof(X, B^example(X, A, B), Answers).
```

15.) What will `Answers` and `B` unify with in the following query? Show all alternative answers, in any order you prefer.

```
?- setof(X, A^example(X, A, B), Answers).
```

16.) What will `Answers`, `A`, and `B` unify with in the following query? Show all alternative answers, in any order you prefer.

```
?- setof(X, example(X, A, B), Answers).
```

17.) What will `Answers` unify with in the following query? Show all alternative answers, in any order you prefer.

```
?- setof(X, example(X, _, _), Answers).
```

18.) What will `Answers` unify with in the following query? Show all alternative answers, in any order you prefer.

```
?- setof(bar(X, A), example(X, A, B), Answers).
```

19.) What will `Answers` unify with in the following query? Show all alternative answers, in any order you prefer.

```
?- setof(bar(X, B), example(X, A, B), Answers).
```