

**COMP 410
Summer 2024**

Unification with Lists in Prolog

Finish writing the unifications below so that the queries produce the correct values. The first one has been done for you, with the answer shown in **bold**.

1.)-----

```
?- List = [1, 2, 3, 4, 5],
```

```
    List = X.
```

```
List = X,
```

```
X = [1, 2, 3, 4, 5].
```

2.)-----

```
?- List = [1, 2, 3, 4, 5],
```

```
    List =
```

```
List = [1, 2, 3, 4, 5],
```

```
H = 1,
```

```
T = [2, 3, 4, 5].
```

3.)-----

```
?- List = [1, 2, 3, 4, 5],
```

```
    List =
```

```
List = [1, 2, 3, 4, 5],
```

```
A = 1,
```

```
B = 2,
```

```
T = [3, 4, 5].
```

4.)-----

```
?- List = [1, 2, 3, 4, 5],
```

```
    List =
```

```
List = [1, 2, 3, 4, 5],
```

```
A = 1,
```

```
B = 2.
```

```
% different problem than #3 - no T
```

5.)-----
?- List = [1, 2, 3],

List =

List = [1, 2, 3],
A = 1,
B = 2,
C = 3.

6.)-----
?- List = [[1, 2], 3],

List =

List = [[1, 2], 3],
A = [1, 2],
B = [3].

7.)-----
?- List = [[1, 2], 3],

List =

List = [[1, 2], 3],
A = 1,
B = [2],
C = [3].

8.)-----
?- List = [[1, 2], [3, 4]],

List =

List = [[1, 2], [3, 4]],
A = 1,
B = 2,
C = [4],
D = [].