

# Assignment 11

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AP21110010201

1.

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```
equal(A,B) :- A=B.  
equal(B,C) :- B=C.  
equal(C,A) :- C=A.  
  
is_equilateral(A, B, C) :- equal(A,B) , equal(B,C) , equal(C,A).  
  
is_isosceles(A, B, C) :- equal(A,B),\+equal(C,A) ;  
                        equal(B,C),\+equal(B,A) ;  
                        equal(C,A),\+equal(B,C).
```

## Outputs

```
?- is_isosceles(12,12,4).  
true .
```

```
?- is_isosceles(12,13,13).  
true.
```

```
?- is_isosceles(13,13,13).  
false.
```

```
?- is_isosceles(13,14,13).  
true .
```

```
?- is_equilateral(20,20,20).  
true.
```

```
?- is_equilateral(20,20,30).  
false.
```

2.

```
pit(1, 1).  
pit(2, 1).  
wumpus(1, 2).  
  
safe(X, Y) :-  
    \+ pit(X, Y),  
    \+ wumpus(X, Y),  
    adjacent_safe(X, Y).  
adjacent_safe(X, Y) :-  
    X1 is X + 1, X2 is X - 1, Y1 is Y + 1, Y2 is Y - 1,  
    (  
        \+ pit(X1, Y), \+ wumpus(X1, Y);  
        \+ pit(X, Y1), \+ wumpus(X, Y1);  
        \+ pit(X2, Y), \+ wumpus(X2, Y);  
        \+ pit(X, Y2), \+ wumpus(X, Y2)  
    ).  
  
is_safe(X, Y) :-  
    safe(X, Y).
```

▲

## Outputs

```
?- is_safe(1,2).  
false.
```

```
?- is_safe(2,2).  
true .
```

```
?- is_safe(2,1).  
false.
```