

In a school, there are total 100 students numbered from 1 to 100. You're given three lists named 'C', 'F', and 'H', representing students who play cricket, football, and hockey, respectively. Based on this information, find out and print the following:

- Students who play all the three sports
- Students who play both cricket and football but don't play hockey
- Students who play exactly two of the sports
- Students who don't play any of the three sports

```
In [24]: Crick = [7, 8, 9, 18, 20, 21, 25, 26, 27, 31, 32, 34, 35, 36, 40, 43, 45, 47, 53, 58, 62, 67, 68, 71, 72, 74, 75, 76, 80, 81, 82,
Foot = [1, 7, 10, 13, 16, 22, 24, 29, 30, 32, 34, 39, 40, 43, 44, 48, 56, 60, 65, 68, 69, 73, 77, 78, 90, 93, 94, 95, 96]
Hock = [5, 12, 14, 17, 20, 21, 22, 25, 28, 30, 37, 38, 39, 40, 42, 44, 57, 59, 61, 62, 67, 71, 75, 76, 77, 82, 83, 86, 87, 92, 94,
```

```
In [25]: C = set(Crick)
F = set(Foot)
H = set(Hock)
```

**Q1. Which are the students who play all the three sports?**

- [22, 39]
- [39, 82]
- [40, 95]
- [82, 94]

```
In [28]: C&F&H
```

```
Out[28]: {40, 95}
```

**Q2. Which are the players who play both cricket and hockey but don't play football?**

- [20, 21, 25, 62, 67, 71, 75, 76, 82]
- [20, 21, 22, 25, 30, 32, 34]
- [20, 21, 22, 25, 30, 32, 34, 39, 43, 44, 62]
- [20, 21, 68, 71, 75, 76]

In [30]: `(C&H)-F`

Out[30]: {20, 21, 25, 62, 67, 71, 75, 76, 82}

**Q3. How many players play exactly two sports?**

- 19
- 20
- 21
- 22

In [39]: 

```
len(  
    (  
        (C&H)-F  
    ).union(  
        (C&F)-H  
    ).union(  
        (H&F)-C  
    )  
)
```

Out[39]: 22

In [43]: `len((C&H)-F | (C&F)-H | (F&H)-C)`

Out[43]: 22

**Q4. Which of these students do not play any of the sports? (More than one option may be correct)**

- 41
- 48
- 63
- 85

```
In [49]: A = set(range(1,101))  
len(A)
```

```
Out[49]: 100
```

```
In [51]: len(A-(C|H|F))
```

```
Out[51]: 29
```

```
In [53]: for i in [41,48,63,85]:  
         if i in A-(C|H|F):  
             print(i)
```

```
41  
63  
85
```

```
In [54]: A-(C|H|F)
```

```
Out[54]: {2,  
3,  
4,  
6,  
11,  
15,  
19,  
23,  
33,  
41,  
46,  
49,  
50,  
51,  
52,  
54,  
55,  
63,  
64,  
66,
```

```
70,  
79,  
84,  
85,  
88,  
89,  
91,  
98,  
100}
```

In [ ]: