EX1:

1 - V

2 - F

3 - V

4 - F

5 - F

6 - V

7 - V

8 - F

9 - F

10 - V

11 - V

12 - V

EX2:

1 - E = { a, b }

2 - E = { a, b, h, e, k, j }

3 - E = { d, c, h, e, b }

4 - E = { }

5 - E = { f, k, j }

6 - E = { a, e, h }

7 - E = { k, f, e }

Ex3: R = A | J = B | V = C



Ex4:

A = le soir

B = la dernière heure

C = la libre belgique

A ∪ B ∪ C = #(A) + #(B) + #(C) - #(A ∩B) - #(A ∩C) - #(B∩ C) + #(A ∩B∩C)

52 = 25 + 26 + 23 - 9 - 11 - 8 + #(A ∩B∩C)

#(A ∩B∩C) = 52 - 46 = 6



EX5:

1. (A ∪ B) ∩(A ∪ !B)

= A ∪ (B ∩ !B)

= A ∪ ∅

= A

1. (A ∩ **U**) ∪ (B ∩ A)

= A ∩ (B ∪ **U**)

= A ∩ **U**

= A

1. A ∩ (B ∪ !B)

= A ∩ **U**

= A

1. A ∪ (!A ∩ B)

= (A ∪ !A) ∩ (A ∪ B)

= **U** ∩ (A ∪ B)

= A ∪ B

1. A ∩ (B ∪ !A)

= (A ∩ B) ∪ (A ∩ !A)

= (A ∩ B) ∪ ∅

= A ∩ B

1. A ∩ (B ∪ C ∪ !B)

= A ∩ (**U** ∪ C)

= A ∩ **U**

= A

1. A ∪ (B ∩ !B)

= A ∪ ∅

= A

1. (A ∩ B) ∪(A ∩ !B)

= A ∩ (B ∪ !B)

= A ∩ **U**

= A

1. (A ∪ B) ∩ (A ∪ B)

= B ∪ (A ∩ !A)

= B ∪ ∅

= B

1. B ∩ !(B ∪ !A)

= B ∩ !B ∩ A

= ∅ ∩ A

= ∅

1. A ∪ !(A ∩ B)

= A ∪ !A ∪ !B

= **U**  ∪ !B

= **U**

EX SUPPLÉMENTAIRES

Ex1:

1. A = {1, 2, 3, 4, 6, 8, 12, 24}

B = {1, 2, 3, 4, 9, 12, 18, 36}

1. #(A ∪ B) = 11
2. A ∩ B = {1, 2, 3, 4, 12}

A ∪ B = {1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36)

A \ B = {6, 8, 24}

B \ A = {9, 18, 36}

A ⊕ B = {6, 8, 9, 18, 24, 36}

Ex2:

A ∩ B = [3, 4]

A ∪ B = ]2, 5]

A \ B = ]2, 3[

B \ A = [3, 5]

A ⊕ B = ]2, 3] U [3, 5]

Ex3:

1. x = {0, 4, 8, 9, 12, 16, 20, 23, 24}
2. { x² | x ∈ N\* & x <= 10}

Ex4:

#(∅) = 0