SQL

(1)
```
select * from U
```

(2)
```
select * from U u
where u.Ville = 'Londres'
```

(3)
```
select NF from PUF l
where l.NU = 1 and l.NP = 1
```

(4) (a)
```
select distinct p.NomP, p.Couleur
from P p, PUF l
where l.NP = p.NP and l.NF = 1
```

(b)
```
select p.NomP, p.Couleur
from P p
where p.NP in
  ( select l.NP
    from PUF l where l.NF = 1 )
```

(5) (a)
```
select distinct l.NF
from PUF l, P p
where p.Couleur = 'rouge' and l.NP = p.NP and l.NU = 1
```

(b)
```
select distinct NF from PUF
where NU = 1
and NP in
  ( select NP
    from P where Couleur = 'rouge' )
```

(6) (a)
```
select distinct NomF
from PUF, P, F, U
where Couleur = 'rouge'
and PUF.NP = P.NP and PUF.NF = F.NF and PUF.NU = U.NU
and ( U.Ville = 'Londres' or U.Ville = 'Paris' )
```

(b)
```
select f.NomF
from F f
where f.NF in
  ( select l.NF
    from PUF l
    where l.NP in
      ( select p.NP from P p
        where p.Couleur = 'rouge')
    and l.NU in
      ( select u.NU from U u
        where u.Ville = 'Londres' or u.Ville = 'Paris' ) )
```

(7)
```
select distinct l.NP
from PUF l, F f, U u
where l.NF = f.NF and l.NU = u.NU and u.Ville = f.Ville
```

(8) (a)
```
select distinct l.NP
from PUF l, F f, U u
where l.NF = f.NF and l.NU = u.NU
and f.Ville = 'Londres' and u.Ville = 'Londres'
```

(b)
```
select distinct l.NP
from PUF l
where l.NF in
  ( select f.NF
    from F f
    where f.Ville = 'Londres' )
and l.NU in
  ( select u.NU
    from U u
    where u.Ville = 'Londres' )
```

(9)
```
select distinct l.NU
from PUF l, F f, U u
where l.NF = f.NF and l.NU = u.NU and u.Ville <> f.Ville
```

(10) (a)
```
select distinct first.NF
from PUF first, PUF second
where first.NF = second.NF and first.NU = 1 and second.NU = 2
```

(b)
```
select distinct l.NF
from PUF l
where l.NU = 2
and l.NF in
  ( select l.NF from PUF l where l.NU = 1 )
```

(c)
```
select distinct l.NF
from PUF l
where l.NU = 2
and l.NF in
  ( select k.NF from PUF k where k.NU = 1 )
```

(d)
```
select l1.NF from PUF l1 where l1.NU = 1
       intersect
select l2.NF from PUF l2 where l2.NU = 2
```

(11)
```
select distinct l.NU from PUF l
where l.NP in
  ( select k.NP from PUF k
    where k.NF = 3 )
```

(12) (a)
```
select p.NP
from P p
where p.Poids in
  ( select min(q.Poids) from P q )
```

(b)
```
select p1.NP
from P p1
where not exists
  ( select *
    from P p2
    where p1.Poids > p2.Poids )
```

(c)
```
select p.NP
from P p
where p.Poids <= ( select q.Poids from P q )
```

(13)
```
select u.NU from U u
where u.NU not in
  ( select l.NU
    from PUF l, P p, F f
    where l.NP = p.NP and l.NF = f.NF
    and p.Couleur = 'rouge' and f.Ville = 'Londres' )
```

(14) (a)
```
select distinct puf.NF
from PUF puf, PUF puf1, PUF puf2, P p
where p.couleur = 'rouge'
and p.NP = puf2.NP and puf2.NF = puf1.NF and puf1.NP = puf.NP
```

(b)
```
select distinct l.NF from PUF l
where l.NP in
  ( select l1.NP
    from PUF l1
    where l1.NF in
    ( select l2.NF
      from PUF l2
      where l2.NP in
      ( select p.NP
        from P p
        where p.Couleur = 'rouge' ) ) )
```

(15)
```
select distinct f.Ville, l.NP, u.Ville
from PUF l, U u, F f
where l.NF = f.NF and l.NU = u.NU
```

(16)
```
select distinct f.Ville, l.NP, u.Ville
from PUF l, U u, F f
where f.Ville <> u.Ville and l.NF = f.NF and l.NU = u.NU
```

(17) (a)
```
select p.NP from P p
where not exists
  ( select u.NU
    from U u
    where u.Ville = 'Londres'
    and not exists
    ( select * from PUF l
      where p.NP = l.NP and u.NU = l.NU ) )
```

Note : Pour tout produit $p.NP$ sélectionné, il n'existe pas d'usine u à Londres pour laquelle il n'existe pas de produit $l.NP$ livré.

(b)
```
select distinct p.NP from P p, PUF l, U u
where p.NP = l.NP and l.NU = u.NU
and u.Ville = 'Londres'
group by p.NP
having count(distinct l.NU) =
  (select count(u.NU) from U u where u.Ville = 'Londres')
```

(18)
```
select f.NF from F f
where exists
  ( select p.NP
    from P p
    where not exists
      ( select u.NU
        from U u
        where not exists
        ( select *
          from PUF l
          where f.NF = l.NF and u.NU = l.NU
          and p.NP = l.NP) ) )
```

Note : Pour tout fournisseur sélectionné, il n'existe pas d'usine qui ne soit pas livrée en produit p du fournisseur f.

(19)
```
select u.NU from U u
where not exists
  ( select * from PUF l1
    where l1.NF = 4 and not exists
      ( select * from PUF l2
        where u.NU=l2.NU and l1.NP=l2.NP and l2.NF=4 ) )
```

Note : pour toute usine selectionnée, il n'existe pas de produit du fournisseur 4 qui ne soit pas livré à l'usine par le fournisseur 4.

(20)
```
select u.NU from U u
where u.NU not in
  ( select l.NU
    from PUF l
    where l.NF <> 3 )
```

(21)
```
insert into F values (45, 'Alfred', 'sous-traitant', 'Chalon')
```

(22)
```
delete from P where NP >= 100 and NP <= 199 and couleur = 'noir'
```

(23)
```
update F
set Ville = 'Nice'
where NF = 1
```

(24)
```
update F
set statut = 'sous-traitant'
where Ville = 'Paris' or Ville = 'Lyon'
```

(25)
```
select count(distinct l.NU)
from PUF l
where l.NF = 1
```

(26)
```
select l.NP, l.NU, sum(l.Quantité)
from PUF l
group by l.NP, l.NU
```

(27)
```
select distinct l1.NF
from PUF l1, PUF l2
where l1.NP=5 and l2.NP=9 and l1.NF=l2.NF
```