23.2

```
<!DOCTYPE db [
    <!ELEMENT emp (ename, children*, skills*)>
    <!ELEMENT children (name, birthday)>
    <!ELEMENT birthday (day, month, year)>
    <!ELEMENT skills (type, exams+)>
    <!ELEMENT exams (year, city)>
    <!ELEMENT ename( #PCDATA )>
    <!ELEMENT name( #PCDATA )>
    <!ELEMENT day( #PCDATA )>
    <!ELEMENT month( #PCDATA )>
    <!ELEMENT year( #PCDATA )>
    <!ELEMENT type( #PCDATA )>
    <!ELEMENT city( #PCDATA )>
] >
```

23.3

/db/emp/skills/type

23.9
a.
```
<parts>
 <part>
  <name> bicycle </name>
  <subpartinfo>
   <part>
    <name> wheel </name>
    <subpartinfo>
     <part>
      <name> rim </name>
     </part>
     <qty= 1 </qty>
    </subpartinfo>
    <subpartinfo>
     <part>
      <name> spokes </name>
     </part>
     <qty; 40 </qty>
    <lsubpartinfo>
    <subpartinfo>
```

```
        <part>
          <name> tire </name>
        </part>
        <qty> 1 </qty>
      </subpartinfo>
    </part>
    <qty>2 </qty>
  </subpartinfo>
  <subpartinfo>
    <part>
      <name> brake </name>
    </part>
    <qty= 2 </qty>
  </subpartinfo>
  <subpartinfo>
    <part>
      <name> gear </name>
    </part>
    <qty= 3 </qty>
  </subpartinfo>
  <subpartinfo>
    <part>
      <name> frame </name>
    </part>
    <qty= 1 </qty>
  </subpartinfo>
 </part>
</parts>
```

b.
part(partid, name)
subpartinfo(partid, subpartid, qty)

c.

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">
<xs:element name="parts" type="partsType" />
<xs:complexType name="partType">
    <xs:sequence>
            <xs:element name="name" type="xs:string"/>
            <xs:element name="subpartinfo" type="subpartinfoType"
                minOccurs="0" maxOccurs="unbounded"/>
    </xs:sequence>
<xs:complexType name="subpartinfoType"/>
    <xs:sequence>
            <xs:element name="part" type="partType"/>
            <xs:element name="quantity" type="xs:string"/>
    </xs:sequence>
</xs:schema>
```

23.11

a.
```
for $e in /db/emp,
    $m in distinct-values($e/children/birthday/month)
where $m = 'March'
return $e/ename
```

b.
```
for $e in /db/emp
    $s in $e/skills[type='typing']
    $exam in $s/exams
where $exam/city= 'Dayton'
return $e/ename
```

c.
```
for $t in distinct-values (/db/emp/skills/type)
return $t
```