

Document #1

```
{
  "name": "CarCar&Car",
  "address": {
    "street": "Montepaolo"
    "number": 78
  },
  "cars": [
    { "model": "Tesla"
      "year": 2021
      "price": 45'000
    },
    { "model": "Citroen"
      "year": 2003
      "price": 10'000
    },
    { "model": "Fiat"
      "year": 1998
      "price": 5'300
    }
  ],
  owner: {
    "name": "Michele"
    "surname": "Fumagalli"
    "age": 56
  }
}
```

Document #2

```
{
  "name": "Deals&Co",
  "address": {
    "street": "Pascani Luca"
    "number": 89
  },
  "cars": [
    { "model": "Ferrari"
      "year": 2018
      "price": 320'000
    },
    { "model": "Lamborghini"
      "year": 2020
      "price": 450'000
    },
    { "model": "Citroen"
      "year": 2001
      "price": 12'000
    }
  ],
  owner: {
    "name": "Filippo"
    "surname": "Mercanti"
    "age": 41
  }
}
```

Document #3

```
{
  "name": "Buy&SellCars",
  "address": {
    "street": "Papa Giovanni"
    "number": 12
  },
  "cars": [
    { "model": "BMW"
      "year": 2013
      "price": 35'000
    },
    { "model": "Audi"
      "year": 2019
      "price": 45'000
    },
    { "model": "Mercedes"
      "year": 2016
      "price": 56'000
    }
  ],
  owner: {
    "name": "Mattia"
    "surname": "Scanzani"
    "age": 48
  }
}
```

Consider the following query. Which documents s are returned?

```
db.car_dealers_collection.find({  
  "$or": [{ "address.number": { "$gte": 80 } },  
    { "$and": [{ "cars.model": "BWM"},  
      { "owner.name": "Mattia" } ] }  
  ] })
```

- ☐ Document #1
- ☐ Document #2
- ☐ Document #3
- ☐ None

Consider the following query. Which documentss are returned?

```
db.car_dealers_collection.aggregate([  
    { "$match": { "cars.model": "Citroen" } },  
    { "$match": { "cars.price": { "$gt": 100'000 } } }  
])
```

- ☐ Document #1
- ☐ Document #2
- ☐ Document #3
- ☐ None

Consider the following query. Complete the table with its output. It may not be necessary to fill all the columns and/or rows.

```
db.car_dealers_collection.aggregate([
    {"$unwind": {"path": "$cars"}},
    {"$group": {"_id": "$cars.price",
                "tot": {"$sum": 1}}}
])
```

[illegible]

Consider the following query. Complete the table with its output. It may not be necessary to fill all the columns and/or rows.

```
db.car_dealers_collection.aggregate([
    {"$unwind": {"path": "$cars"}},
    {"$match": {"cars.brand": "Ferrari"}},
    {"$group": {"_id": "$cars.price",
                "tot": {"$sum": "$cars.price"}}}
])
```

[illegible]

Which of the following queries s returns (at least) Document #1?

- ☐ `db.car_dealers_collection.aggregate([
 {"$match": {"cars.year": 2021}},
 {"$match": {"cars.model": "Fiat"}},
])`
- ☐ `db.car_dealers_collection.find({"cars.price": {"$lt": 10'000}})`
- ☐ `db.car_dealers_collection.find({}, {"cars": 1, "owner": 1})`
- ☐ `db.car_dealers_collection.aggregate([
 {"$match": {"cars": {"$elemMatch": {"year": 2021, "model": "Citroen"}}}}
])`
- ☐ None

Document #1

```
{
  "name": "Car&Car",
  "address": {
    "street": "Montepaolo"
    "number": 35
  },
  "cars": [
    { "model": "Tesla"
      "year": 2023
      "price": 85'000
    },
    { "model": "Citroen"
      "year": 2003
      "price": 14'000
    },
    { "model": "Fiat"
      "year": 1998
      "price": 9'300
    }
  ],
  owner: {
    "name": "Michele"
    "surname": "Remora"
    "age": 39
  }
}
```

Document #2

```
{
  "name": "Deals&Co",
  "address": {
    "street": "Luccarelli"
    "number": 19
  },
  "cars": [
    { "model": "Ferrari"
      "year": 2017
      "price": 320'000
    },
    { "model": "Ferrari"
      "year": 2020
      "price": 450'000
    },
    { "model": "Ferrari"
      "year": 2001
      "price": 152'000
    }
  ],
  owner: {
    "name": "Fernando"
    "surname": "Gianotti"
    "age": 60
  }
}
```

Document #3

```
{
  "name": "Buy&Sell",
  "address": {
    "street": "Sant'Antonio"
    "number": 27
  },
  "cars": [
    { "model": "BMW"
      "year": 2017
      "price": 150'000
    },
    { "model": "Audi"
      "year": 2019
      "price": 25'000
    },
    { "model": "Mercedes"
      "year": 2019
      "price": 260'000
    }
  ],
  owner: {
    "name": "Mattia"
    "surname": "Fernandi"
    "age": 36
  }
}
```

Consider the following query. Which documents s are returned?

```
db.car_dealers_collection.find({
  "$or": [{ "address.number": { "$gte": 80 } },
    { "$and": [{ "cars.model": "BWM"},
      { "owner.name": "Mattia" } ] }
  ]})
```

- ☐ Document #1
- ☐ Document #2
- ☐ Document #3
- ☐ None

Consider the following query. Which documents s are returned?

```
db.car_dealers_collection.aggregate([  
    { "$match": { "cars.model": "Citroen" } },  
    { "$match": { "cars.price": { "$gt": 100'000 } } }  
])
```

- ☐ Document #1
- ☐ Document #2
- ☐ Document #3
- ☐ None

Consider the following query. Complete the table with its output. It may not be necessary to fill all the columns and/or rows.

```
db.car_dealers_collection.aggregate([
    {"$unwind": {"path": "$cars"} },
    {"$group": {"_id": "$cars.model",
                "tot": {"$sum": "$cars.price"} }
    ])
```

[illegible]

Consider the following query. Complete the table with its output. It may not be necessary to fill all the columns and/or rows.

```
db.car_dealers_collection.aggregate([
    {"$unwind": {"path": "$cars"}},
    {"$match": {"cars.brand": "Ferrari"}},
    {"$group": {"_id": true,
                "tot": {"$sum": 10'000}}}
])
```

[illegible]

Which of the following queries s returns (at least) Document #2?

- ☐ `db.car_dealers_collection.find({"cars.price": {"$lt": 10'000} })`
- ☐ `db.car_dealers_collection.find({ }, {"cars": 1, "owner": 1})`
- ☐ `db.car_dealers_collection.aggregate([
 {"$match": {"cars": {"$elemMatch": {"year": 2021, "model": "Ferrari"} } } }
])`
- ☐ `db.car_dealers_collection.aggregate([
 {"$match": {"cars.year": {"$lt": 2021} } },
 {"$match": {"cars.model": {"ne": "Ferrari"} } },
])`
- ☐ None

Document #1

```
{
  "name": "CarDeals",
  "address": {
    "street": "Luccarelli"
    "number": 1
  },
  "cars": [
    { "model": "Ferrari"
      "year": 2017
      "price": 320'000
    },
    { "model": "Ferrari"
      "year": 2020
      "price": 450'000
    },
    { "model": "Ferrari"
      "year": 2001
      "price": 152'000
    }
  ],
  owner: {
    "name": "Fernando"
    "surname": "Mandelli"
    "age": 30
  }
}
```

Document #2

```
{
  "name": "Deals&Co",
  "address": {
    "street": "Santa Maria M."
    "number": 36
  },
  "cars": [
    { "model": "BMW"
      "year": 2018
      "price": 320'000
    },
    { "model": "Mercedes"
      "year": 2020
      "price": 46'000
    },
    { "model": "Ferrari"
      "year": 2001
      "price": 190'000
    }
  ],
  owner: {
    "name": "Dennis"
    "surname": "Bracchetti"
    "age": 49
  }
}
```

Document #3

```
{
  "name": "CarsCarsGo",
  "address": {
    "street": "Giovanni Paolo"
    "number": 18
  },
  "cars": [
    { "model": "BMW"
      "year": 2013
      "price": 35'000
    },
    { "model": "Audi"
      "year": 2019
      "price": 45'000
    },
    { "model": "Mercedes"
      "year": 2016
      "price": 56'000
    }
  ],
  owner: {
    "name": "Simon"
    "surname": "Pirelli"
    "age": 48
  }
}
```

Consider the following query. Which documents s are returned?

```
db.car_dealers_collection.find({
  "$or": [{ "address.number": { "$gte": 80 } },
    { "$and": [{ "cars.model": "BWM"},
      { "owner.name": "Mattia" } ] }
  ]})
```

- ☐ Document #1
- ☐ Document #2
- ☐ Document #3
- ☐ None

Consider the following query. Which documentss are returned?

```
db.car_dealers_collection.aggregate([  
    { "$match": { "cars.model": "Ferrari" } },  
    { "$match": { "cars.price": { "$lt": 100'000 } } }  
])
```

- ☐ Document #1
- ☐ Document #2
- ☐ Document #3
- ☐ None

Consider the following query. Complete the table with its output. It may not be necessary to fill all the columns and/or rows.

```
db.car_dealers_collection.aggregate([
    {"$unwind": {"path": "$cars"}},
    {"$group": {"_id": true,
                "tot": {"$sum": 1}}}
])
```

[illegible]

Consider the following query. Complete the table with its output. It may not be necessary to fill all the columns and/or rows.

```
db.car_dealers_collection.aggregate([
    {"$unwind": {"path": "$cars"}},
    {"$match": {"cars.brand": "Ferrari"}},
    {"$group": {"_id": "$cars.model",
                "tot": {"$sum": "$cars.year"}}}
])
```

[illegible]

Which of the following queries s returns (at least) Document #3?

- ☐ `db.car_dealers_collection.find({"cars.price": {"$gt": 30'000} })`
- ☐ `db.car_dealers_collection.aggregate([
 {"$match": {"cars": {"$elemMatch": {"year": 2019, "model": "Ferrari"} } } }
])`
- ☐ `db.car_dealers_collection.aggregate([
 {"$match": {"cars.year": {"$lt": 2021} } },
 {"$match": {"cars.model": {"ne": "Mercedes"} } },
])`
- ☐ `db.car_dealers_collection.find({ }, {"cars": 1, "name": 1})`
- ☐ None

Document #1

```
{
  "name": "NiceCars",
  "address": {
    "street": "Paolo Sarca"
    "number": 45
  },
  "cars": [
    { "model": "BMW"
      "year": 2021
      "price": 45'000
    },
    { "model": "Fiat"
      "year": 2003
      "price": 23'000
    },
    { "model": "Fiat"
      "year": 1998
      "price": 9'300
    }
  ],
  owner: {
    "name": "Riccardo"
    "surname": "Savesi"
    "age": 39
  }
}
```

Document #2

```
{
  "name": "CarDeals",
  "address": {
    "street": "Lucarelli"
    "number": 12
  },
  "cars": [
    { "model": "BMW"
      "year": 2018
      "price": 220'000
    },
    { "model": "Mercedes"
      "year": 2020
      "price": 120'000
    },
    { "model": "Bentley"
      "year": 2019
      "price": 170'000
    }
  ],
  owner: {
    "name": "Laura"
    "surname": "Mastro"
    "age": 31
  }
}
```

Document #3

```
{
  "name": "Deals&Co",
  "address": {
    "street": "Santa Maria M."
    "number": 6
  },
  "cars": [
    { "model": "Audi"
      "year": 2018
      "price": 320'000
    },
    { "model": "Audi"
      "year": 2020
      "price": 46'000
    },
    { "model": "Ferrari"
      "year": 2001
      "price": 190'000
    }
  ],
  owner: {
    "name": "Marina"
    "surname": "De Bernardi"
    "age": 51
  }
}
```

Consider the following query. Which documents s are returned?

```
db.car_dealers_collection.find({
  "$or": [{ "address.number": { "$gte": 3 } },
    { "$and": [{ "cars.model": "BWM"},
      { "owner.name": "Mattia" } ] }
  ]})
```

- ☐ Document #1
- ☐ Document #2
- ☐ Document #3
- ☐ None

Consider the following query. Which documentss are returned?

```
db.car_dealers_collection.aggregate([  
    { "$match": { "cars.price": { "$gt": 150'000 } } },  
    { "$match": { "cars.price": { "$lt": 100'000 } } }  
])
```

- ☐ Document #1
- ☐ Document #2
- ☐ Document #3
- ☐ None

Consider the following query. Complete the table with its output. It may not be necessary to fill all the columns and/or rows.

```
db.car_dealers_collection.aggregate([
    {"$unwind": {"path": "$cars"}},
    {"$group": {"_id": "$cars.year",
                "tot": {"$sum": 1}}}
])
```

[illegible]

Consider the following query. Complete the table with its output. It may not be necessary to fill all the columns and/or rows.

```
db.car_dealers_collection.aggregate([
    { "$unwind": { "path": "$cars" } },
    { "$match": { "cars.brand": "BMW" } },
    { "$group": { "_id": "$cars.year",
                  "tot": { "$sum": "$cars.price" } } }
])
```

[illegible]

Which of the following queries s returns (at least) Document #3?

- ☐ `db.car_dealers_collection.find({"cars.price": {"$lt": 300'000} })`
- ☐ `db.car_dealers_collection.aggregate([
 {"$match": {"cars": {"$elemMatch": {"year": 2020, "model": "Audi"} } } }
])`
- ☐ `db.car_dealers_collection.aggregate([
 {"$match": {"cars.year": {"$lt": 2001} } },
 {"$match": {"cars.model": {"ne": "Mercedes"} } },
])`
- ☐ `db.car_dealers_collection.find({ }, {"cars": 1, "name": 1, "owner": 1})`
- ☐ None