

```
class FiniteEndorelationProperties(ABC):
```

```
    @abstractmethod
```

```
    def is_reflexive(self, fr: FiniteRelation) -> bool:
        """ Return True if the relation is reflexive. """
```

```
    @abstractmethod
```

```
    def is_irreflexive(self, fr: FiniteRelation) -> bool:
        """ Return True if the relation is irreflexive. """
```

```
    @abstractmethod
```

```
    def is_transitive(self, fr: FiniteRelation) -> bool:
        """ Return True if the relation is transitive. """
```

```
    @abstractmethod
```

```
    def is_symmetric(self, fr: FiniteRelation) -> bool:
        """ Return True if the relation is symmetric """
```

```
    @abstractmethod
```

```
    def is_antisymmetric(self, fr: FiniteRelation) -> bool:
        """ Return True if the relation is antisymmetric """
```

```
    @abstractmethod
```

```
    def is_asymmetric(self, fr: FiniteRelation) -> bool:
        """ Return True if the relation is asymmetric """
```