Nomor 1

1. Jawaban : Kontradiksi

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **p** | **q** | **~p** | **~p ^ q** | **p ^ (~p ^ q)** |
| B | B | S | S | S |
| B | S | S | S | S |
| S | B | B | B | S |
| S | S | B | S | S |

1. Jawaban : Kontradiksi

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **p** | **q** | **~q** | **p → q** | **~q ^ p** | **(p→q) ^ (~q^p)** |
| B | B | S | B | S | S |
| B | S | B | S | B | S |
| S | B | S | B | S | S |
| S | S | B | B | S | S |

Nomor 2

1. Jawaban : Ekuivalen

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **p** | **q** | **~p** | **p → q** | **p→q v ~p** | **~p v q** |
| B | B | S | B | B | B |
| B | S | S | S | S | S |
| S | B | B | B | B | B |
| S | S | B | B | B | B |

1. If you do not get a degree, you will not get a job. You got a job. Therefore you must have got a degree.

* P: DEGREE
* Q: JOB

~P 🡪 ~Q

Q

-----------

P

(~P 🡪 ~Q) ^ Q 🡪 P

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **P** | **Q** | **~P** | **~Q** | **(~P -> ~Q)** | **(~P -> ~Q) ^ Q** | **(~P -> ~Q) ^ Q -> P** |
| B | B | S | S | B | S | B |
| B | S | S | B | B | B | B |
| S | B | B | S | S | S | B |
| S | S | B | B | B | B | B |

Answer: VALID

1. Tanya is either a singer or a ballerina. If she is a singer then she has a lovely voice. If she is a ballerina then she has long legs. Tanya has lovely voice and long legs so she is both.

* P: singer
* Q: ballerina
* R: voice
* T: legs

P v Q

P 🡪 R

Q 🡪 T

R ^ T

-----------

P ^ Q

(((P v Q) ^ (P 🡪 R)) ^ (Q 🡪 T)) ^ (R ^ T) 🡪 P ^ Q

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **P** | **Q** | **R** | **T** | **P v Q** | **P -> R** | **Q -> T** | **R ^ T** | **(P v Q) ^ (P -> R)** | **((P v Q) ^ (P -> R)) ^ (Q -> T)** | **((P v Q) ^ (P -> R)) ^ (Q -> T)) ^ (R ^ T)** | **P ^ Q** | **(((P v Q) ^ (P -> R)) ^ (Q -> T)) ^ (R ^ T) -> P ^ Q** |
| B | B | B | B | B | B | B | B | B | B | B | B | B |
| B | B | B | S | B | B | S | S | B | S | S | B | B |
| B | B | S | B | B | S | B | S | S | S | S | B | B |
| B | B | S | S | B | S | S | S | S | S | S | B | B |
| B | S | B | B | B | B | B | B | B | B | B | S | S |
| B | S | B | S | B | B | B | S | B | B | S | S | B |
| B | S | S | B | B | S | B | S | S | S | S | S | B |
| B | S | S | S | B | S | B | S | S | S | S | S | B |
| S | B | B | B | B | B | B | B | B | B | B | S | S |
| S | B | B | S | B | B | S | S | B | S | S | S | B |
| S | B | S | B | B | B | B | S | B | B | S | S | B |
| S | B | S | S | B | B | S | S | B | S | S | S | B |
| S | S | B | B | S | B | B | B | S | S | S | S | B |
| S | S | B | S | S | B | B | S | S | S | S | S | B |
| S | S | S | B | S | B | B | S | S | S | S | S | B |
| S | S | S | S | S | B | B | S | S | S | S | S | B |

Answer: INVALID