

Example 1

English

Pat is at home or Pat is at work.

Pat is not at home.

Pat is at work.

Example 1

English

Pat is at home or Pat is at work.

Pat is not at home.

Pat is at work.

Key

H = Pat is at home

W = Pat is at work

Example 1

English

Pat is at home or Pat is at work.
Pat is not at home.

Pat is at work.

Key

H = Pat is at home

W = Pat is at work

Tableau

(1) $H \vee W$
 |
(2) $\neg H$
 |
(3) W

Example 1

English

Pat is at home or Pat is at work.
Pat is not at home.

Pat is at work.

Key

H = Pat is at home

W = Pat is at work

Tableau

- (1) $H \vee W$
- (2) $\neg H$
- (3) $\neg W$

Example 1

English

Pat is at home or Pat is at work.
Pat is not at home.

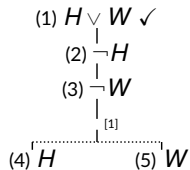
Pat is at work.

Key

H = Pat is at home

W = Pat is at work

Tableau



Example 1

English

Pat is at home or Pat is at work.
Pat is not at home.

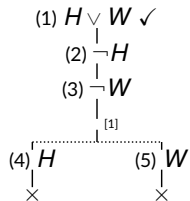
Pat is at work.

Key

H = Pat is at home

W = Pat is at work

Tableau



Example 2

English

Pat is at home or Pat is at work.

Pat is at home.

Pat is not at work.

Example 2

English

Pat is at home or Pat is at work.

Pat is at home.

Pat is not at work.

Key

H = Pat is at home

W = Pat is at work

Example 2

English

Pat is at home or Pat is at work.
Pat is at home.

Pat is not at work.

Key

H = Pat is at home

W = Pat is at work

Tableau

(1) $H \vee W$
 |
 (2) H
 |
 (3) $\neg W$

Example 2

English

Pat is at home or Pat is at work.
Pat is at home.

Pat is not at work.

Key

H = Pat is at home

W = Pat is at work

Tableau

(1) $H \vee W$

(2) H

(3) $\neg(\neg W)$

Example 2

English

Pat is at home or Pat is at work.
Pat is at home.

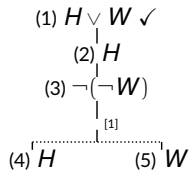
Pat is not at work.

Key

H = Pat is at home

W = Pat is at work

Tableau



Example 2

English

Pat is at home or Pat is at work.
Pat is at home.

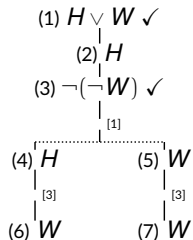
Pat is not at work.

Key

H = Pat is at home

W = Pat is at work

Tableau



Example 2

English

Pat is at home or Pat is at work.
Pat is at home.

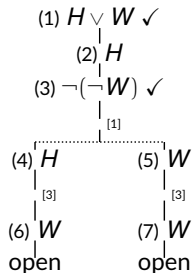
Pat is not at work.

Key

H = Pat is at home

W = Pat is at work

Tableau



Example 3

English

Pat is here or Kim is here.

If Kim is here then Sam is not happy.

Sam is happy.

Pat is here.

Example 3

English

Pat is here or Kim is here.

If Kim is here then Sam is not happy.

Sam is happy.

Pat is here.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Example 3

English

Pat is here or Kim is here.

If Kim is here then Sam is not happy.

Sam is happy.

Pat is here.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau

$$\begin{array}{l} (1) P \vee K \\ (2) (K \rightarrow \neg S) \\ (3) S \\ (4) P \end{array}$$

Example 3

English

Pat is here or Kim is here.

If Kim is here then Sam is not happy.

Sam is happy.

Pat is here.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau

$$\begin{array}{l} (1) P \vee K \\ (2) (K \rightarrow \neg S) \\ (3) S \\ (4) \neg P \end{array}$$

Example 3

English

Pat is here or Kim is here.

If Kim is here then Sam is not happy.

Sam is happy.

Pat is here.

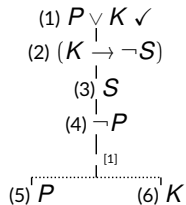
Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau



Example 3

English

Pat is here or Kim is here.

If Kim is here then Sam is not happy.

Sam is happy.

Pat is here.

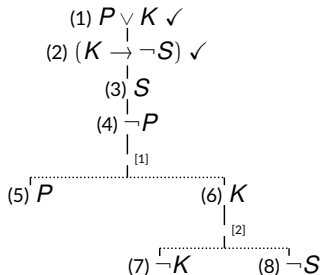
Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau



Example 3

English

Pat is here or Kim is here.

If Kim is here then Sam is not happy.

Sam is happy.

Pat is here.

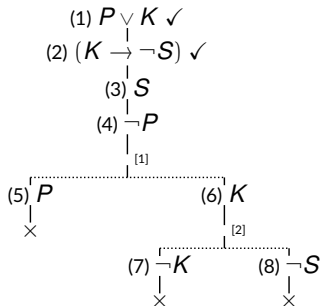
Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau



English

Pat is here or Kim is here.

If Kim is here then Sam is not happy.

Sam is not happy.

Kim is here.

Example 4

English

Pat is here or Kim is here.

If Kim is here then Sam is not happy.

Sam is not happy.

Kim is here.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Example 4

English

Pat is here or Kim is here.

If Kim is here then Sam is not happy.

Sam is not happy.

Kim is here.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau

$$\begin{array}{l} (1) P \vee K \\ (2) (K \rightarrow \neg S) \\ (3) \neg S \\ (4) K \end{array}$$

Example 4

English

Pat is here or Kim is here.

If Kim is here then Sam is not happy.

Sam is not happy.

Kim is here.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau

$$\begin{array}{l} (1) P \vee K \\ (2) (K \rightarrow \neg S) \\ (3) \neg S \\ (4) \neg K \end{array}$$

Example 4

English

Pat is here or Kim is here.

If Kim is here then Sam is not happy.

Sam is not happy.

Kim is here.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau

$$\begin{array}{l} (1) P \vee K \checkmark \\ | \\ (2) (K \rightarrow \neg S) \\ | \\ (3) \neg S \\ | \\ (4) \neg K \\ | \\ [1] \\ \hline (5) P \qquad (6) K \end{array}$$

Example 4

English

Pat is here or Kim is here.

If Kim is here then Sam is not happy.

Sam is not happy.

Kim is here.

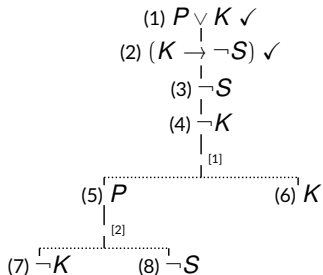
Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau



Example 4

English

Pat is here or Kim is here.

If Kim is here then Sam is not happy.

Sam is not happy.

Kim is here.

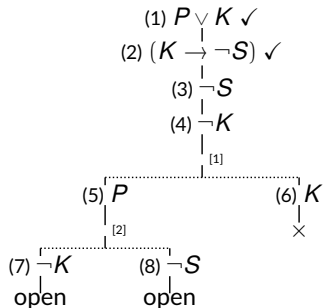
Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau



Example 5

English

Pat is here and Kim is here.

If Kim is here then Sam is not happy.

Sam is not happy.

Kim is here.

Example 5

English

Pat is here and Kim is here.

If Kim is here then Sam is not happy.

Sam is not happy.

Kim is here.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Example 5

English

Pat is here and Kim is here.

If Kim is here then Sam is not happy.

Sam is not happy.

Kim is here.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau

$$\begin{array}{l} (1) P \wedge K \\ (2) (K \rightarrow \neg S) \\ (3) \neg S \\ (4) K \end{array}$$

Example 5

English

Pat is here and Kim is here.

If Kim is here then Sam is not happy.

Sam is not happy.

Kim is here.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau

$$\begin{array}{l} (1) P \wedge K \\ (2) (K \rightarrow \neg S) \\ (3) \neg S \\ (4) \neg K \end{array}$$

Example 5

English

Pat is here and Kim is here.

If Kim is here then Sam is not happy.

Sam is not happy.

Kim is here.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau

(1) $P \wedge K \checkmark$
|
(2) $(K \rightarrow \neg S)$
|
(3) $\neg S$
|
(4) $\neg K$
|
[1]
|
(5) P
|
(6) K

Example 5

English

Pat is here and Kim is here.

If Kim is here then Sam is not happy.

Sam is not happy.

Kim is here.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau

$$\begin{array}{l} (1) \ P \wedge K \ \checkmark \\ \quad | \\ (2) \ (K \rightarrow \neg S) \\ \quad | \\ (3) \ \neg S \\ \quad | \\ (4) \ \neg K \\ \quad | \\ \quad [1] \\ \quad | \\ (5) \ P \\ \quad | \\ (6) \ K \\ \quad | \\ \quad \times \end{array}$$

Example 6

English

If Kim is in Worcester then Kim is in
Massachusetts.

Kim is in Worcester.

Kim is in Massachusetts.

Example 6

English

If Kim is in Worcester then Kim is in
Massachusetts.

Kim is in Worcester.

Kim is in Massachusetts.

Key

W = Kim is in Worcester

M = Kim is in Massachusetts

Example 6

English

If Kim is in Worcester then Kim is in Massachusetts.

Kim is in Worcester.

Kim is in Massachusetts.

Key

W = Kim is in Worcester

M = Kim is in Massachusetts

Tableau

(1) $W \rightarrow M$
 |
(2) W
 |
(3) M

Example 6

English

If Kim is in Worcester then Kim is in Massachusetts.

Kim is in Worcester.

Kim is in Massachusetts.

Key

W = Kim is in Worcester

M = Kim is in Massachusetts

Tableau

- (1) $W \rightarrow M$
- (2) W
- (3) $\neg M$

Example 6

English

If Kim is in Worcester then Kim is in Massachusetts.

Kim is in Worcester.

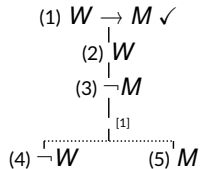
Kim is in Massachusetts.

Key

W = Kim is in Worcester

M = Kim is in Massachusetts

Tableau



Example 6

English

If Kim is in Worcester then Kim is in Massachusetts.

Kim is in Worcester.

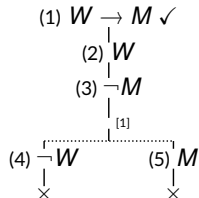
Kim is in Massachusetts.

Key

W = Kim is in Worcester

M = Kim is in Massachusetts

Tableau



Example 7

English

If Kim is in Worcester then Kim is in
Massachusetts.

Kim is in Massachusetts.

Kim is in Worcester.

Example 7

English

If Kim is in Worcester then Kim is in
Massachusetts.

Kim is in Massachusetts.

Kim is in Worcester.

Key

W = Kim is in Worcester

M = Kim is in Massachusetts

Example 7

English

If Kim is in Worcester then Kim is in Massachusetts.

Kim is in Massachusetts.

Kim is in Worcester.

Key

W = Kim is in Worcester

M = Kim is in Massachusetts

Tableau

(1) $W \rightarrow M$
 |
(2) M
 |
(3) W

Example 7

English

If Kim is in Worcester then Kim is in Massachusetts.

Kim is in Massachusetts.

Kim is in Worcester.

Key

W = Kim is in Worcester

M = Kim is in Massachusetts

Tableau

- (1) $W \rightarrow M$
 - (2) M
 - (3) $\neg W$

Example 7

English

If Kim is in Worcester then Kim is in Massachusetts.

Kim is in Massachusetts.

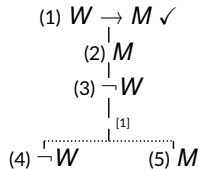
Kim is in Worcester.

Key

W = Kim is in Worcester

M = Kim is in Massachusetts

Tableau



Example 7

English

If Kim is in Worcester then Kim is in Massachusetts.

Kim is in Massachusetts.

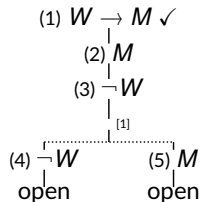
Kim is in Worcester.

Key

W = Kim is in Worcester

M = Kim is in Massachusetts

Tableau



Example 8

English

If the dragon is awake, then the princess is hiding.

The dragon is awake.

The princess is hiding.

Example 8

English

If the dragon is awake, then the princess is hiding.

The dragon is awake.

The princess is hiding.

Key

D = The dragon is awake

H = The princess is hiding

Example 8

English

If the dragon is awake, then the princess is hiding.

The dragon is awake.

The princess is hiding.

Key

D = The dragon is awake

H = The princess is hiding

Tableau

$$\begin{array}{l} (1) \ D \rightarrow H \\ \quad | \\ (2) \ D \\ \quad | \\ (3) \ H \end{array}$$

Example 8

English

If the dragon is awake, then the princess is hiding.

The dragon is awake.

The princess is hiding.

Key

D = The dragon is awake

H = The princess is hiding

Tableau

$$\begin{array}{l} (1) D \rightarrow H \\ \quad | \\ (2) D \\ \quad | \\ (3) \neg H \end{array}$$

Example 8

English

If the dragon is awake, then the princess is hiding.

The dragon is awake.

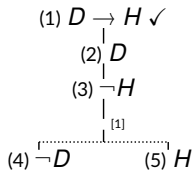
The princess is hiding.

Key

D = The dragon is awake

H = The princess is hiding

Tableau



Example 8

English

If the dragon is awake, then the princess is hiding.

The dragon is awake.

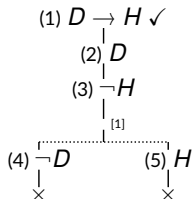
The princess is hiding.

Key

D = The dragon is awake

H = The princess is hiding

Tableau



Example 9

English

If the dragon is awake, then the princess is hiding.

The dragon is not awake.

The princess is not hiding.

Example 9

English

If the dragon is awake, then the princess is hiding.

The dragon is not awake.

The princess is not hiding.

Key

D = The dragon is awake

H = The princess is hiding

Example 9

English

If the dragon is awake, then the princess is hiding.

The dragon is not awake.

The princess is not hiding.

Key

D = The dragon is awake

H = The princess is hiding

Tableau

- (1) $D \rightarrow H$
- (2) $\neg D$
- (3) $\neg H$

Example 9

English

If the dragon is awake, then the princess is hiding.

The dragon is not awake.

The princess is not hiding.

Key

D = The dragon is awake

H = The princess is hiding

Tableau

(1) $D \rightarrow H$

(2) $\neg D$

(3) $\neg(\neg H)$

Example 9

English

If the dragon is awake, then the princess is hiding.

The dragon is not awake.

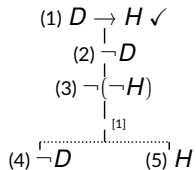
The princess is not hiding.

Key

D = The dragon is awake

H = The princess is hiding

Tableau



Example 9

English

If the dragon is awake, then the princess is hiding.

The dragon is not awake.

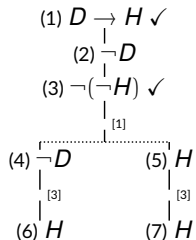
The princess is not hiding.

Key

D = The dragon is awake

H = The princess is hiding

Tableau



Example 9

English

If the dragon is awake, then the princess is hiding.

The dragon is not awake.

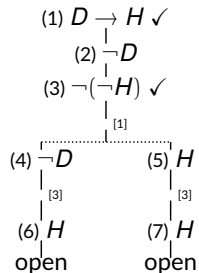
The princess is not hiding.

Key

D = The dragon is awake

H = The princess is hiding

Tableau



Example 10

English

If Alice misses the bus, she will be late.

If Alice is late, the professor notices her absence.

Alice misses the bus.

The professor notices her absence.

Example 10

English

If Alice misses the bus, she will be late.

If Alice is late, the professor notices her absence.

Alice misses the bus.

The professor notices her absence.

Key

M = Alice misses the bus

L = Alice is late

N = The professor notices her

Example 10

English

If Alice misses the bus, she will be late.

If Alice is late, the professor notices her absence.

Alice misses the bus.

The professor notices her absence.

Key

M = Alice misses the bus

L = Alice is late

N = The professor notices her absence

Tableau

$$\begin{array}{l} (1) \ M \rightarrow L \\ \quad | \\ (2) \ L \rightarrow N \\ \quad | \\ (3) \ M \\ \quad | \\ (4) \ N \end{array}$$

Example 10

English

If Alice misses the bus, she will be late.

If Alice is late, the professor notices her absence.

Alice misses the bus.

The professor notices her absence.

Key

M = Alice misses the bus

L = Alice is late

N = The professor notices her

Tableau

- (1) $M \rightarrow L$
- (2) $L \rightarrow N$
- (3) M
- (4) $\neg N$

Example 10

English

If Alice misses the bus, she will be late.

If Alice is late, the professor notices her absence.

Alice misses the bus.

The professor notices her absence.

Key

M = Alice misses the bus

L = Alice is late

N = The professor notices her

Tableau

$$\begin{array}{l} (1) \ M \rightarrow L \checkmark \\ | \\ (2) \ L \rightarrow N \\ | \\ (3) \ M \\ | \\ (4) \ \neg N \\ | \\ \quad [1] \\ \hline (5) \ \neg M \qquad (6) \ L \end{array}$$

Example 10

English

If Alice misses the bus, she will be late.

If Alice is late, the professor notices her absence.

Alice misses the bus.

The professor notices her absence.

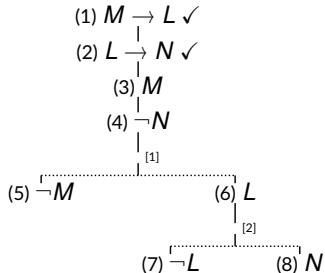
Key

M = Alice misses the bus

L = Alice is late

N = The professor notices her absence

Tableau



Example 10

English

If Alice misses the bus, she will be late.

If Alice is late, the professor notices her absence.

Alice misses the bus.

The professor notices her absence.

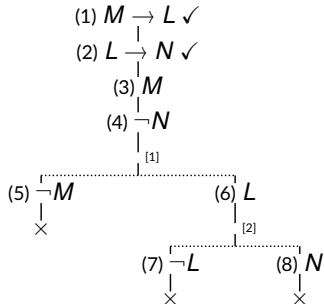
Key

M = Alice misses the bus

L = Alice is late

N = The professor notices her absence

Tableau



Example 11

English

If Alice misses the bus, she will be late.

If Alice is late, the professor notices her absence.

The professor notices her absence.

Alice misses the bus.

Example 11

English

If Alice misses the bus, she will be late.

If Alice is late, the professor notices her absence.

The professor notices her absence.

Alice misses the bus.

Key

M = Alice misses the bus

L = Alice is late

N = The professor notices her

Example 11

English

If Alice misses the bus, she will be late.

If Alice is late, the professor notices her absence.

The professor notices her absence.

Alice misses the bus.

Key

M = Alice misses the bus

L = Alice is late

N = The professor notices her

Tableau

(1) $M \rightarrow L$
|
(2) $L \rightarrow N$
|
(3) N
|
(4) M

Example 11

English

If Alice misses the bus, she will be late.

If Alice is late, the professor notices her absence.

The professor notices her absence.

Alice misses the bus.

Key

M = Alice misses the bus

L = Alice is late

N = The professor notices her

Tableau

- (1) $M \rightarrow L$
- (2) $L \rightarrow N$
- (3) N
- (4) $\neg M$

Example 11

English

If Alice misses the bus, she will be late.

If Alice is late, the professor notices her absence.

The professor notices her absence.

Alice misses the bus.

Key

M = Alice misses the bus

L = Alice is late

N = The professor notices her

Tableau

$$\begin{array}{l} (1) \ M \rightarrow L \checkmark \\ | \\ (2) \ L \rightarrow N \\ | \\ (3) \ N \\ | \\ (4) \ \neg M \\ | \\ \quad [1] \\ \hline (5) \ \neg M \qquad (6) \ L \end{array}$$

Example 11

English

If Alice misses the bus, she will be late.

If Alice is late, the professor notices her absence.

The professor notices her absence.

Alice misses the bus.

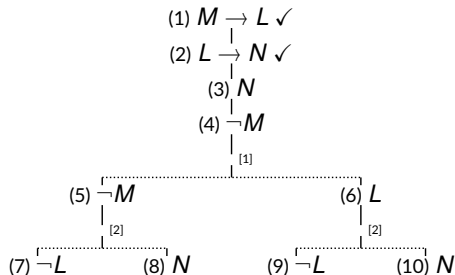
Key

M = Alice misses the bus

L = Alice is late

N = The professor notices her absence

Tableau



Example 11

English

If Alice misses the bus, she will be late.

If Alice is late, the professor notices her absence.

The professor notices her absence.

Alice misses the bus.

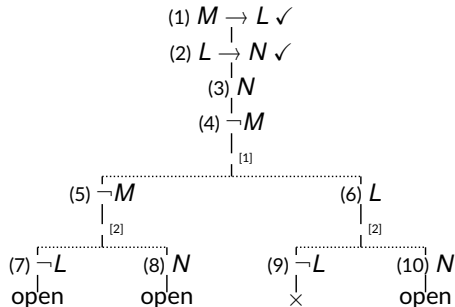
Key

M = Alice misses the bus

L = Alice is late

N = The professor notices her absence

Tableau



Example 12

English

Elvis is in the building or Madonna is
in the building.

Elvis is in the building.

Example 12

English

Elvis is in the building or Madonna is
in the building.

Elvis is in the building.

Key

E = Elvis is in the building

M = Madonna is in the building

Example 12

English

Elvis is in the building or Madonna is in the building.

Elvis is in the building.

Key

E = Elvis is in the building

M = Madonna is in the building

Tableau

$$\begin{array}{l} (1) E \vee M \\ \quad | \\ (2) E \end{array}$$

Example 12

English

Elvis is in the building or Madonna is in the building.

Elvis is in the building.

Key

E = Elvis is in the building

M = Madonna is in the building

Tableau

$$\begin{array}{l} (1) E \vee M \\ \quad | \\ (2) \neg E \end{array}$$

Example 12

English

Elvis is in the building or Madonna is in the building.

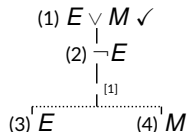
Elvis is in the building.

Key

E = Elvis is in the building

M = Madonna is in the building

Tableau



Example 12

English

Elvis is in the building or Madonna is in the building.

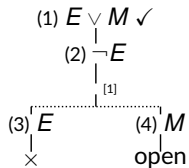
Elvis is in the building.

Key

E = Elvis is in the building

M = Madonna is in the building

Tableau



English

Elvis is in the building.

Elvis is in the building or Madonna is
in the building.

Example 13

English

Elvis is in the building.

Elvis is in the building or Madonna is
in the building.

Key

E = Elvis is in the building

M = Madonna is in the building

Example 13

English

Elvis is in the building.

Elvis is in the building or Madonna is
in the building.

Key

E = Elvis is in the building

M = Madonna is in the building

Tableau

$$\begin{array}{l} (1) E \\ (2) E \vee M \end{array}$$

Example 13

English

Elvis is in the building.

Elvis is in the building or Madonna is
in the building.

Key

E = Elvis is in the building

M = Madonna is in the building

Tableau

$$\begin{array}{l} (1) E \\ (2) \neg((E \vee M)) \end{array}$$

Example 13

English

Elvis is in the building.

Elvis is in the building or Madonna is
in the building.

Key

E = Elvis is in the building

M = Madonna is in the building

Tableau

$$\begin{array}{l} (1) E \\ | \\ (2) \neg((E \vee M)) \quad \checkmark \\ | \\ [2] \\ | \\ (3) \neg E \\ | \\ (4) \neg M \end{array}$$

Example 13

English

Elvis is in the building.

Elvis is in the building or Madonna is
in the building.

Key

E = Elvis is in the building

M = Madonna is in the building

Tableau

$$\begin{array}{l} (1) E \\ | \\ (2) \neg((E \vee M)) \checkmark \\ | \\ [2] \\ | \\ (3) \neg E \\ | \\ (4) \neg M \\ | \\ \times \end{array}$$

Example 14

English

It is not the case that Pat is here and
Kim is here.

Pat is not here or Kim is not here.

Example 14

English

It is not the case that Pat is here and
Kim is here.

Pat is not here or Kim is not here.

Key

P = Pat is here

K = Kim is here

Example 14

English

It is not the case that Pat is here and Kim is here.

Pat is not here or Kim is not here.

Key

P = Pat is here

K = Kim is here

Tableau

(1) $\neg((P \wedge K))$

(2) $(\neg P \vee \neg K)$

Example 14

English

It is not the case that Pat is here and Kim is here.

Pat is not here or Kim is not here.

Key

P = Pat is here

K = Kim is here

Tableau

$$(1) \neg((P \wedge K))$$

$$(2) \neg((\neg P \vee \neg K))$$

Example 14

English

It is not the case that Pat is here and Kim is here.

Pat is not here or Kim is not here.

Key

$P = \text{Pat is here}$

$K = \text{Kim is here}$

Tableau

$$(1) \neg((P \wedge K)) \checkmark$$
$$(2) \neg((\neg P \vee \neg K))$$
$$\begin{array}{c} \vdots \\ [1] \\ \text{---} \end{array}$$

(3) $\neg P$
(4) $\neg K$

Example 14

English

It is not the case that Pat is here and Kim is here.

Pat is not here or Kim is not here.

Key

$P = \text{Pat is here}$

$K = \text{Kim is here}$

Tableau

$$\begin{array}{c}
 (1) \neg((P \wedge K)) \checkmark \\
 (2) \neg((\neg P \vee \neg K)) \checkmark \\
 \quad | \\
 \quad [1] \\
 \begin{array}{cc}
 (3) \neg P & (4) \neg K \\
 \quad | & \quad | \\
 \quad [2] & \quad [2] \\
 \begin{array}{cc}
 (5) \neg(\neg P) & (7) \neg(\neg P) \\
 \quad | & \quad | \\
 (6) \neg(\neg K) & (8) \neg(\neg K)
 \end{array}
 \end{array}
 \end{array}$$

Example 14

English

It is not the case that Pat is here and Kim is here.

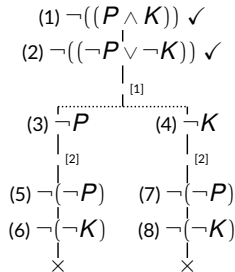
Pat is not here or Kim is not here.

Key

P = Pat is here

K = Kim is here

Tableau



Example 15

English

Pat is not here or Kim is not here.

It is not the case that Pat is here and
Kim is here.

Example 15

English

Pat is not here or Kim is not here.

It is not the case that Pat is here and
Kim is here.

Key

P = Pat is here

K = Kim is here

Example 15

English

Pat is not here or Kim is not here.

It is not the case that Pat is here and
Kim is here.

Key

P = Pat is here

K = Kim is here

Tableau

(1) $(\neg P \vee \neg K)$

(2) $\neg((P \wedge K))$

Example 15

English

Pat is not here or Kim is not here.

It is not the case that Pat is here and
Kim is here.

Key

P = Pat is here

K = Kim is here

Tableau

(1) $(\neg P \vee \neg K)$

(2) $\neg(\neg(P \wedge K))$

Example 15

English

Pat is not here or Kim is not here.

It is not the case that Pat is here and Kim is here.

Key

$P = \text{Pat is here}$

$K = \text{Kim is here}$

Tableau

$$(1) (\neg P \vee \neg K) \checkmark$$
$$(2) \neg(\neg((P \wedge K)))$$
$$\begin{array}{c} | \\ [1] \\ \hline (3) \neg P \qquad (4) \neg K \end{array}$$

Example 15

English

Pat is not here or Kim is not here.

It is not the case that Pat is here and Kim is here.

Key

$P = \text{Pat is here}$

$K = \text{Kim is here}$

Tableau

$$\begin{array}{l}
 (1) (\neg P \vee \neg K) \checkmark \\
 (2) \neg(\neg((P \wedge K))) \checkmark \\
 \quad |^{[1]} \\
 \begin{array}{cc}
 (3) \neg P & (4) \neg K \\
 |^{[2]} & |^{[2]} \\
 (5) P \wedge K & (6) P \wedge K
 \end{array}
 \end{array}$$

Example 15

English

Pat is not here or Kim is not here.

It is not the case that Pat is here and Kim is here.

Key

$P = \text{Pat is here}$

$K = \text{Kim is here}$

Tableau

$$\begin{array}{l}
 (1) (\neg P \vee \neg K) \checkmark \\
 (2) \neg(\neg((P \wedge K))) \checkmark \\
 \quad | [1] \\
 \left(\begin{array}{ll}
 (3) \neg P & (4) \neg K \\
 | [2] & | [2] \\
 (5) P \wedge K \checkmark & (6) P \wedge K \\
 | [5] & \\
 (7) P & \\
 | & \\
 (8) K &
 \end{array} \right.
 \end{array}$$

Example 15

English

Pat is not here or Kim is not here.

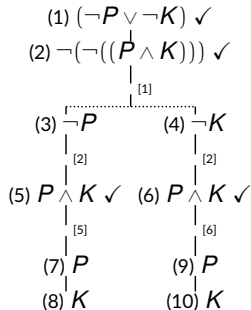
It is not the case that Pat is here and Kim is here.

Key

P = Pat is here

K = Kim is here

Tableau



Example 15

English

Pat is not here or Kim is not here.

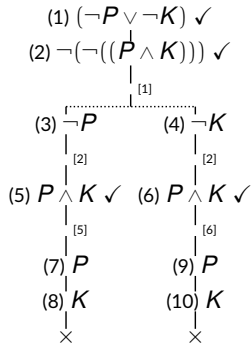
It is not the case that Pat is here and Kim is here.

Key

P = Pat is here

K = Kim is here

Tableau



Example 16

English

It is not the case that Pat is here or
Kim is here.

Pat is not here and Kim is not here.

Example 16

English

It is not the case that Pat is here or
Kim is here.

Pat is not here and Kim is not here.

Key

P = Pat is here

K = Kim is here

Example 16

English

It is not the case that Pat is here or
Kim is here.

Pat is not here and Kim is not here.

Key

P = Pat is here

K = Kim is here

Tableau

(1) $\neg((P \vee K))$

(2) $(\neg P \wedge \neg K)$

Example 16

English

It is not the case that Pat is here or
Kim is here.

Pat is not here and Kim is not here.

Key

P = Pat is here

K = Kim is here

Tableau

$$(1) \neg((P \vee K))$$

$$(2) \neg(\neg P \wedge \neg K)$$

Example 16

English

It is not the case that Pat is here or
Kim is here.

Pat is not here and Kim is not here.

Key

P = Pat is here

K = Kim is here

Tableau

$$\begin{array}{l} (1) \neg((P \vee K)) \checkmark \\ (2) \neg(\neg P \wedge \neg K) \\ \quad |^{[1]} \\ (3) \neg P \\ \quad | \\ (4) \neg K \end{array}$$

Example 16

English

It is not the case that Pat is here or
Kim is here.

Pat is not here and Kim is not here.

Key

P = Pat is here

K = Kim is here

Tableau

$$\begin{array}{l} (1) \neg((P \vee K)) \checkmark \\ (2) \neg((\neg P \wedge \neg K)) \checkmark \\ \quad | \quad [1] \\ (3) \neg P \\ \quad | \\ (4) \neg K \\ \quad | \quad [2] \\ (5) \neg(\neg P) \quad (6) \neg(\neg K) \end{array}$$

English

Pat is not here and Kim is not here.

It is not the case that Pat is here or
Kim is here.

Example 17

English

Pat is not here and Kim is not here.

It is not the case that Pat is here or
Kim is here.

Key

P = Pat is here

K = Kim is here

Example 17

English

Pat is not here and Kim is not here.

It is not the case that Pat is here or
Kim is here.

Key

P = Pat is here

K = Kim is here

Tableau

(1) $(\neg P \wedge \neg K)$

(2) $\neg((P \vee K))$

Example 17

English

Pat is not here and Kim is not here.

It is not the case that Pat is here or
Kim is here.

Key

P = Pat is here

K = Kim is here

Tableau

(1) $(\neg P \wedge \neg K)$

(2) $\neg(\neg((P \vee K)))$

Example 17

English

Pat is not here and Kim is not here.

It is not the case that Pat is here or
Kim is here.

Key

P = Pat is here

K = Kim is here

Tableau

$$\begin{array}{l} (1) (\neg P \wedge \neg K) \checkmark \\ (2) \neg(\neg((P \vee K))) \\ \quad |^{[1]} \\ (3) \neg P \\ \quad | \\ (4) \neg K \end{array}$$

Example 17

English

Pat is not here and Kim is not here.

It is not the case that Pat is here or
Kim is here.

Key

P = Pat is here

K = Kim is here

Tableau

$$\begin{array}{l} (1) (\neg P \wedge \neg K) \checkmark \\ (2) \neg(\neg((P \vee K))) \checkmark \\ \quad | \quad [1] \\ (3) \neg P \\ \quad | \\ (4) \neg K \\ \quad | \quad [2] \\ (5) P \vee K \end{array}$$

Example 17

English

Pat is not here and Kim is not here.

It is not the case that Pat is here or
Kim is here.

Key

P = Pat is here

K = Kim is here

Tableau

$$\begin{array}{l} (1) (\neg P \wedge \neg K) \checkmark \\ (2) \neg(\neg((P \vee K))) \checkmark \\ \quad | \quad [1] \\ (3) \neg P \\ (4) \neg K \\ \quad | \quad [2] \\ (5) P \vee K \checkmark \\ \quad | \quad [5] \\ (6) P \quad \dots \quad (7) K \end{array}$$

Example 17

English

Pat is not here and Kim is not here.

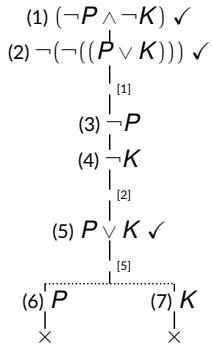
It is not the case that Pat is here or
Kim is here.

Key

P = Pat is here

K = Kim is here

Tableau



Example 18

English

It is not the case that Pat is not here.

Pat is here.

Example 18

English

It is not the case that Pat is not here.

Pat is here.

Key

P = Pat is here

Example 18

English

It is not the case that Pat is not here.

Pat is here.

Key

P = Pat is here

Tableau

(1) $\neg(\neg P)$
 |
 (2) P

Example 18

English

It is not the case that Pat is not here.

Pat is here.

Key

P = Pat is here

Tableau

(1) $\neg(\neg P)$
 |
 (2) $\neg P$

Example 18

English

It is not the case that Pat is not here.

Pat is here.

Key

P = Pat is here

Tableau

$$\begin{array}{l} (1) \neg(\neg P) \\ \quad | \\ (2) \neg P \\ \quad | \\ \quad \times \end{array}$$

Example 19

English

Pat is here.

It is not the case that Pat is not here.

Example 19

English

Pat is here.

It is not the case that Pat is not here.

Key

P = Pat is here

Example 19

English

Pat is here.

It is not the case that Pat is not here.

Key

P = Pat is here

Tableau

(1) P
(2) $\neg(\neg P)$

Example 19

English

Pat is here.

It is not the case that Pat is not here.

Key

P = Pat is here

Tableau

(1) P
|
(2) $\neg(\neg(\neg P))$

Example 19

English

Pat is here.

It is not the case that Pat is not here.

Key

P = Pat is here

Tableau

$$\begin{array}{l} (1) \ P \\ (2) \ \neg(\neg(\neg P)) \quad \checkmark \\ \quad \quad \quad [2] \\ (3) \ \neg P \end{array}$$

Example 19

English

Pat is here.

It is not the case that Pat is not here.

Key

P = Pat is here

Tableau

$$\begin{array}{l} (1) \ P \\ | \\ (2) \ \neg(\neg(\neg P)) \ \checkmark \\ | \\ [2] \\ | \\ (3) \ \neg P \\ | \\ \times \end{array}$$

Example 20

English

If the dragon is awake then the
princess is not singing.

The dragon is awake.

The princess is not singing.

Example 20

English

If the dragon is awake then the princess is not singing.

The dragon is awake.

The princess is not singing.

Key

D = The dragon is awake

S = The princess is singing

Example 20

English

If the dragon is awake then the princess is not singing.

The dragon is awake.

The princess is not singing.

Key

D = The dragon is awake

S = The princess is singing

Tableau

(1) ($D \rightarrow \neg S$)

(2) D

(3) $\neg S$

Example 20

English

If the dragon is awake then the princess is not singing.

The dragon is awake.

The princess is not singing.

Key

D = The dragon is awake

S = The princess is singing

Tableau

(1) ($D \rightarrow \neg S$)

(2) D

(3) $\neg(\neg S)$

Example 20

English

If the dragon is awake then the princess is not singing.

The dragon is awake.

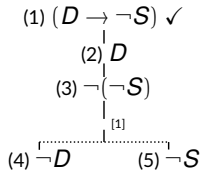
The princess is not singing.

Key

D = The dragon is awake

S = The princess is singing

Tableau



Example 20

English

If the dragon is awake then the princess is not singing.

The dragon is awake.

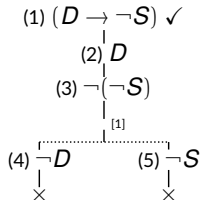
The princess is not singing.

Key

D = The dragon is awake

S = The princess is singing

Tableau



English

the squirrel stole my sandwich or
the raccoon stole my sandwich.
The squirrel did not steal my
sandwich.

The raccoon stole my sandwich.

Example 21

English

the squirrel stole my sandwich or
the raccoon stole my sandwich.
The squirrel did not steal my
sandwich.

The raccoon stole my sandwich.

Key

S = The squirrel stole my sandwich

R = The raccoon stole my sandwich

Example 21

English

the squirrel stole my sandwich or
the raccoon stole my sandwich.
The squirrel did not steal my
sandwich.

The raccoon stole my sandwich.

Key

S = The squirrel stole my sandwich

R = The raccoon stole my sandwich

Tableau

$$\begin{array}{l} (1) \ S \vee R \\ \quad | \\ (2) \ \neg S \\ \quad | \\ (3) \ R \end{array}$$

Example 21

English

the squirrel stole my sandwich or
the raccoon stole my sandwich.
The squirrel did not steal my
sandwich.

The raccoon stole my sandwich.

Key

S = The squirrel stole my sandwich

R = The raccoon stole my sandwich

Tableau

- (1) $S \vee R$
- (2) $\neg S$
- (3) $\neg R$

Example 21

English

the squirrel stole my sandwich or
the raccoon stole my sandwich.
The squirrel did not steal my
sandwich.

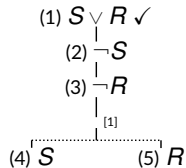
The raccoon stole my sandwich.

Key

S = The squirrel stole my sandwich

R = The raccoon stole my sandwich

Tableau



Example 21

English

the squirrel stole my sandwich or
the raccoon stole my sandwich.
The squirrel did not steal my
sandwich.

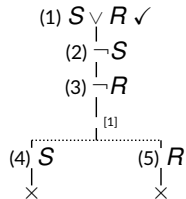
The raccoon stole my sandwich.

Key

S = The squirrel stole my sandwich

R = The raccoon stole my sandwich

Tableau



English

the squirrel stole my sandwich or
the raccoon stole my sandwich.
The squirrel stole my sandwich.

The raccoon did not steal my
sandwich.

Example 22

English

the squirrel stole my sandwich or
the raccoon stole my sandwich.
The squirrel stole my sandwich.

The raccoon did not steal my
sandwich.

Key

S = The squirrel stole my sandwich

R = The raccoon stole my sandwich

Example 22

English

the squirrel stole my sandwich or
the raccoon stole my sandwich.
The squirrel stole my sandwich.

The raccoon did not steal my
sandwich.

Key

S = The squirrel stole my sandwich
 R = The raccoon stole my sandwich

Tableau

(1) $S \vee R$
 |
 (2) S
 |
 (3) $\neg R$

Example 22

English

the squirrel stole my sandwich or
the raccoon stole my sandwich.
The squirrel stole my sandwich.

The raccoon did not steal my
sandwich.

Key

S = The squirrel stole my sandwich
 R = The raccoon stole my sandwich

Tableau

- (1) $S \vee R$
- (2) S
- (3) $\neg(\neg R)$

Example 22

English

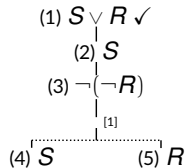
the squirrel stole my sandwich or
the raccoon stole my sandwich.
The squirrel stole my sandwich.

The raccoon did not steal my
sandwich.

Key

S = The squirrel stole my sandwich
 R = The raccoon stole my sandwich

Tableau



Example 22

English

the squirrel stole my sandwich or
the raccoon stole my sandwich.
The squirrel stole my sandwich.

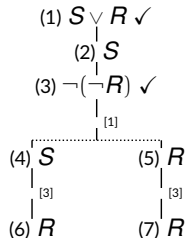
The raccoon did not steal my
sandwich.

Key

S = The squirrel stole my sandwich

R = The raccoon stole my sandwich

Tableau



Example 22

English

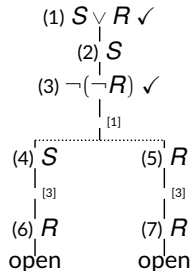
the squirrel stole my sandwich or
the raccoon stole my sandwich.
The squirrel stole my sandwich.

The raccoon did not steal my
sandwich.

Key

S = The squirrel stole my sandwich
 R = The raccoon stole my sandwich

Tableau



Example 23

English

Pat is here and Kim is here.

If Pat is here then Sam is happy.

Sam is happy.

Example 23

English

Pat is here and Kim is here.

If Pat is here then Sam is happy.

Sam is happy.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Example 23

English

Pat is here and Kim is here.

If Pat is here then Sam is happy.

Sam is happy.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau

$$\begin{array}{l} (1) P \wedge K \\ (2) P \rightarrow S \\ (3) S \end{array}$$

Example 23

English

Pat is here and Kim is here.

If Pat is here then Sam is happy.

Sam is happy.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau

$$\begin{array}{l} (1) P \wedge K \\ (2) P \rightarrow S \\ (3) \neg S \end{array}$$

Example 23

English

Pat is here and Kim is here.

If Pat is here then Sam is happy.

Sam is happy.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau

(1) $P \wedge K \checkmark$
|
(2) $P \rightarrow S$
|
(3) $\neg S$
|
[1]
|
(4) P
|
(5) K

Example 23

English

Pat is here and Kim is here.

If Pat is here then Sam is happy.

Sam is happy.

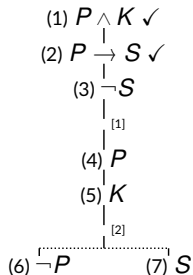
Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau



Example 23

English

Pat is here and Kim is here.

If Pat is here then Sam is happy.

Sam is happy.

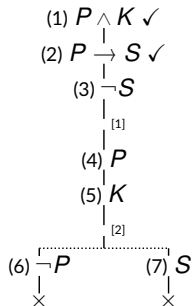
Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau



English

Pat is here.

Kim is here.

Pat is here and Kim is here.

Example 24

English

Pat is here.

Kim is here.

Pat is here and Kim is here.

Key

P = Pat is here

K = Kim is here

Example 24

English

Pat is here.

Kim is here.

Pat is here and Kim is here.

Key

P = Pat is here

K = Kim is here

Tableau

(1) P
|
(2) K
|
(3) $P \wedge K$

Example 24

English

Pat is here.

Kim is here.

Pat is here and Kim is here.

Key

P = Pat is here

K = Kim is here

Tableau

(1) P
|
(2) K
|
(3) $\neg((P \wedge K))$

Example 24

English

Pat is here.

Kim is here.

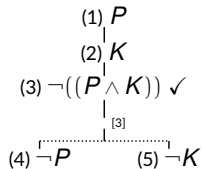
Pat is here and Kim is here.

Key

P = Pat is here

K = Kim is here

Tableau



Example 24

English

Pat is here.

Kim is here.

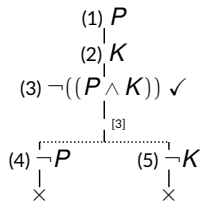
Pat is here and Kim is here.

Key

P = Pat is here

K = Kim is here

Tableau



Example 25

English

Pat is not here and Kim is here.

Pat is not here.

Example 25

English

Pat is not here and Kim is here.

Pat is not here.

Key

P = Pat is here

K = Kim is here

Example 25

English

Pat is not here and Kim is here.

Pat is not here.

Key

P = Pat is here

K = Kim is here

Tableau

(1) $(\neg P \wedge K)$
 $\downarrow$
(2) $\neg P$

Example 25

English

Pat is not here and Kim is here.

Pat is not here.

Key

P = Pat is here

K = Kim is here

Tableau

(1) $(\neg P \wedge K)$

(2) $\neg(\neg P)$

Example 25

English

Pat is not here and Kim is here.

Pat is not here.

Key

P = Pat is here

K = Kim is here

Tableau

(1) $(\neg P \wedge K) \checkmark$
 |
(2) $\neg(\neg P)$
 |
 [1]
(3) $\neg P$
 |
(4) K

Example 25

English

Pat is not here and Kim is here.

Pat is not here.

Key

P = Pat is here

K = Kim is here

Tableau

$$\begin{array}{l} (1) (\neg P \wedge K) \checkmark \\ \quad | \\ (2) \neg(\neg P) \\ \quad | \\ \quad [1] \\ (3) \neg P \\ \quad | \\ (4) K \\ \quad | \\ \quad \times \end{array}$$

Example 26

English

Pat is here and Kim is not here.

Kim is not here.

Example 26

English

Pat is here and Kim is not here.

Kim is not here.

Key

P = Pat is here

K = Kim is here

Example 26

English

Pat is here and Kim is not here.

Kim is not here.

Key

P = Pat is here

K = Kim is here

Tableau

(1) $(P \wedge \neg K)$

(2) $\neg K$

Example 26

English

Pat is here and Kim is not here.

Kim is not here.

Key

P = Pat is here

K = Kim is here

Tableau

(1) $(P \wedge \neg K)$

(2) $\neg(\neg K)$

Example 26

English

Pat is here and Kim is not here.

Kim is not here.

Key

P = Pat is here

K = Kim is here

Tableau

(1) $(P \wedge \neg K) \checkmark$
 |
(2) $\neg(\neg K)$
 |
 [1]
(3) P
 |
(4) $\neg K$

Example 26

English

Pat is here and Kim is not here.

Kim is not here.

Key

P = Pat is here

K = Kim is here

Tableau

$$\begin{array}{l} (1) (P \wedge \neg K) \checkmark \\ \quad | \\ (2) \neg(\neg K) \\ \quad | \\ \quad [1] \\ (3) P \\ \quad | \\ (4) \neg K \\ \quad | \\ \quad \times \end{array}$$

Example 27

English

Pat is not here.

Kim is not here.

Pat is not here and Kim is not here.

Example 27

English

Pat is not here.

Kim is not here.

Pat is not here and Kim is not here.

Key

P = Pat is here

K = Kim is here

Example 27

English

Pat is not here.

Kim is not here.

Pat is not here and Kim is not here.

Key

P = Pat is here

K = Kim is here

Tableau

- (1) $\neg P$
- (2) $\neg K$
- (3) $(\neg P \wedge \neg K)$

Example 27

English

Pat is not here.

Kim is not here.

Pat is not here and Kim is not here.

Key

P = Pat is here

K = Kim is here

Tableau

$$\begin{array}{l} (1) \neg P \\ | \\ (2) \neg K \\ | \\ (3) \neg((\neg P \wedge \neg K)) \end{array}$$

Example 27

English

Pat is not here.

Kim is not here.

Pat is not here and Kim is not here.

Key

P = Pat is here

K = Kim is here

Tableau

$$\begin{array}{l} (1) \neg P \\ | \\ (2) \neg K \\ | \\ (3) \neg((\neg P \wedge \neg K)) \checkmark \\ | \text{ [3]} \\ (4) \neg(\neg P) \quad (5) \neg(\neg K) \end{array}$$

Example 27

English

Pat is not here.

Kim is not here.

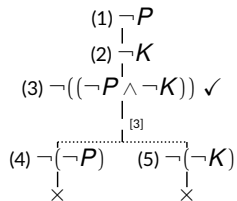
Pat is not here and Kim is not here.

Key

P = Pat is here

K = Kim is here

Tableau



Example 28

English

The dragon is asleep and the princess is singing.

The dragon is asleep.

Example 28

English

The dragon is asleep and the princess is singing.

The dragon is asleep.

Key

D = The dragon is asleep

S = The princess is singing

Example 28

English

The dragon is asleep and the princess is singing.

The dragon is asleep.

Key

D = The dragon is asleep

S = The princess is singing

Tableau

$$\begin{array}{l} (1) \ D \wedge S \\ \quad | \\ (2) \ D \end{array}$$

Example 28

English

The dragon is asleep and the princess is singing.

The dragon is asleep.

Key

D = The dragon is asleep

S = The princess is singing

Tableau

(1) $D \wedge S$
 $\downarrow$
(2) $\neg D$

Example 28

English

The dragon is asleep and the princess is singing.

The dragon is asleep.

Key

D = The dragon is asleep

S = The princess is singing

Tableau

$$\begin{array}{l} (1) \ D \wedge S \checkmark \\ \quad | \\ (2) \ \neg D \\ \quad | \\ \quad [1] \\ (3) \ D \\ \quad | \\ (4) \ S \end{array}$$

Example 28

English

The dragon is asleep and the princess is singing.

The dragon is asleep.

Key

D = The dragon is asleep

S = The princess is singing

Tableau

$$\begin{array}{l} (1) \ D \wedge S \checkmark \\ \quad | \\ (2) \ \neg D \\ \quad | \\ \quad [1] \\ (3) \ D \\ \quad | \\ (4) \ S \\ \quad | \\ \quad \times \end{array}$$

English

The butler is not in the pantry or the
parrot is lying.

The butler is in the pantry.

The parrot is lying.

Example 29

English

The butler is not in the pantry or the parrot is lying.

The butler is in the pantry.

The parrot is lying.

Key

B = The butler is in the pantry

P = The parrot is lying

Example 29

English

The butler is not in the pantry or the parrot is lying.

The butler is in the pantry.

The parrot is lying.

Key

B = The butler is in the pantry

P = The parrot is lying

Tableau

(1) $(\neg B \vee P)$
|
(2) B
|
(3) P

Example 29

English

The butler is not in the pantry or the parrot is lying.

The butler is in the pantry.

The parrot is lying.

Key

B = The butler is in the pantry

P = The parrot is lying

Tableau

- (1) $(\neg B \vee P)$
 - (2) B
 - (3) $\neg P$

Example 29

English

The butler is not in the pantry or the parrot is lying.

The butler is in the pantry.

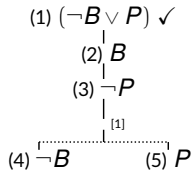
The parrot is lying.

Key

B = The butler is in the pantry

P = The parrot is lying

Tableau



Example 29

English

The butler is not in the pantry or the parrot is lying.

The butler is in the pantry.

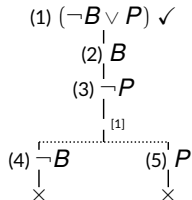
The parrot is lying.

Key

B = The butler is in the pantry

P = The parrot is lying

Tableau



English

The moon is blue and the cow is airborne.

The cow is airborne and the moon is blue.

Example 30

English

The moon is blue and the cow is airborne.

The cow is airborne and the moon is blue.

Key

M = The moon is blue

C = The cow is airborne

Example 30

English

The moon is blue and the cow is airborne.

The cow is airborne and the moon is blue.

Key

M = The moon is blue

C = The cow is airborne

Tableau

$$(1) M \wedge C$$

$$(2) C \wedge M$$

Example 30

English

The moon is blue and the cow is airborne.

The cow is airborne and the moon is blue.

Key

M = The moon is blue

C = The cow is airborne

Tableau

- (1) $M \wedge C$
- (2) $\neg((C \wedge M))$

Example 30

English

The moon is blue and the cow is airborne.

The cow is airborne and the moon is blue.

Key

M = The moon is blue

C = The cow is airborne

Tableau

$$\begin{array}{l} (1) \ M \wedge C \ \checkmark \\ (2) \ \neg((C \wedge M)) \\ \quad |^{[1]} \\ (3) \ M \\ (4) \ C \end{array}$$

Example 30

English

The moon is blue and the cow is airborne.

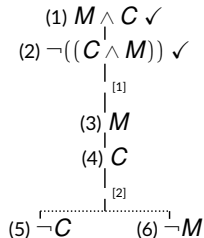
The cow is airborne and the moon is blue.

Key

M = The moon is blue

C = The cow is airborne

Tableau



Example 30

English

The moon is blue and the cow is airborne.

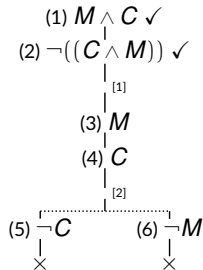
The cow is airborne and the moon is blue.

Key

M = The moon is blue

C = The cow is airborne

Tableau



English

The cat is on the piano.

The dog is not conducting.

The cat is on the piano and the dog
is not conducting.

Example 31

English

The cat is on the piano.

The dog is not conducting.

The cat is on the piano and the dog
is not conducting.

Key

C = The cat is on the piano

D = The dog is conducting

Example 31

English

The cat is on the piano.

The dog is not conducting.

The cat is on the piano and the dog
is not conducting.

Key

C = The cat is on the piano

D = The dog is conducting

Tableau

(1) C
|
(2) $\neg D$
|
(3) $(C \wedge \neg D)$

Example 31

English

The cat is on the piano.

The dog is not conducting.

The cat is on the piano and the dog
is not conducting.

Key

C = The cat is on the piano

D = The dog is conducting

Tableau

$$\begin{array}{l} (1) \ C \\ | \\ (2) \ \neg D \\ | \\ (3) \ \neg((C \wedge \neg D)) \end{array}$$

Example 31

English

The cat is on the piano.

The dog is not conducting.

The cat is on the piano and the dog is not conducting.

Key

C = The cat is on the piano

D = The dog is conducting

Tableau

$$\begin{array}{l} (1) \ C \\ | \\ (2) \ \neg D \\ | \\ (3) \ \neg((C \wedge \neg D)) \checkmark \\ | \\ [3] \\ \hline (4) \ \neg C \qquad (5) \ \neg(\neg D) \end{array}$$

Example 31

English

The cat is on the piano.

The dog is not conducting.

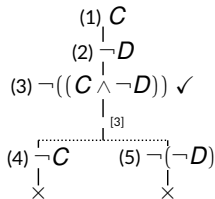
The cat is on the piano and the dog is not conducting.

Key

C = The cat is on the piano

D = The dog is conducting

Tableau



Example 32

English

If the cat is on the piano and the dog
is asleep then the mouse is dancing.

The cat is on the piano.

The dog is asleep.

The mouse is dancing.

Example 32

English

If the cat is on the piano and the dog is asleep then the mouse is dancing.

The cat is on the piano.

The dog is asleep.

The mouse is dancing.

Key

C = The cat is on the piano

D = The dog is asleep

M = The mouse is dancing

Example 32

English

If the cat is on the piano and the dog is asleep then the mouse is dancing.

The cat is on the piano.

The dog is asleep.

The mouse is dancing.

Key

C = The cat is on the piano

D = The dog is asleep

M = The mouse is dancing

Tableau

(1) $((C \wedge D) \rightarrow M)$

(2) C

(3) D

(4) M

Example 32

English

If the cat is on the piano and the dog is asleep then the mouse is dancing.

The cat is on the piano.

The dog is asleep.

The mouse is dancing.

Key

C = The cat is on the piano

D = The dog is asleep

M = The mouse is dancing

Tableau

(1) $((C \wedge D) \rightarrow M)$

(2) C

(3) D

(4) $\neg M$

Example 32

English

If the cat is on the piano and the dog is asleep then the mouse is dancing.

The cat is on the piano.

The dog is asleep.

The mouse is dancing.

Key

C = The cat is on the piano

D = The dog is asleep

M = The mouse is dancing

Tableau

$$\begin{array}{l} (1) ((C \wedge D) \rightarrow M) \checkmark \\ | \\ (2) C \\ | \\ (3) D \\ | \\ (4) \neg M \\ | \\ \quad [1] \\ (5) \neg((C \wedge D)) \quad (6) M \end{array}$$

Example 32

English

If the cat is on the piano and the dog is asleep then the mouse is dancing.

The cat is on the piano.

The dog is asleep.

The mouse is dancing.

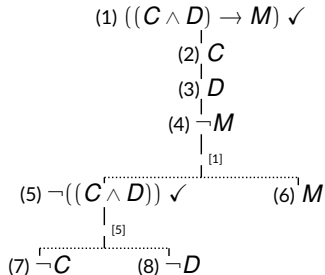
Key

C = The cat is on the piano

D = The dog is asleep

M = The mouse is dancing

Tableau



Example 32

English

If the cat is on the piano and the dog is asleep then the mouse is dancing.

The cat is on the piano.

The dog is asleep.

The mouse is dancing.

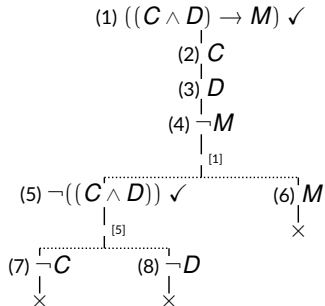
Key

C = The cat is on the piano

D = The dog is asleep

M = The mouse is dancing

Tableau



Example 33

English

If Pat is here then Kim is here and
Sam is happy.

Pat is here.

Kim is here.

Example 33

English

If Pat is here then Kim is here and
Sam is happy.

Pat is here.

Kim is here.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Example 33

English

If Pat is here then Kim is here and
Sam is happy.

Pat is here.

Kim is here.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau

(1) $(P \rightarrow (K \wedge S))$

(2) P

(3) K

Example 33

English

If Pat is here then Kim is here and
Sam is happy.

Pat is here.

Kim is here.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau

(1) ($P \rightarrow (K \wedge S)$)

(2) P

(3) $\neg K$

Example 33

English

If Pat is here then Kim is here and
Sam is happy.

Pat is here.

Kim is here.

Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau

$$\begin{array}{l} (1) (P \rightarrow (K \wedge S)) \checkmark \\ | \\ (2) P \\ | \\ (3) \neg K \\ | \\ [1] \\ \hline (4) \neg P \quad (5) K \wedge S \end{array}$$

Example 33

English

If Pat is here then Kim is here and
Sam is happy.

Pat is here.

Kim is here.

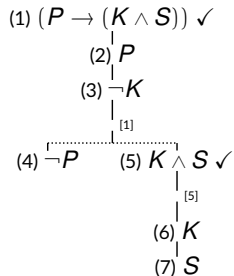
Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau



Example 33

English

If Pat is here then Kim is here and
Sam is happy.

Pat is here.

Kim is here.

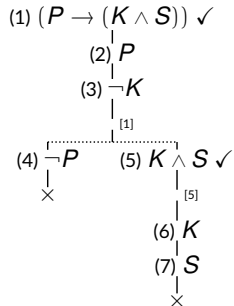
Key

P = Pat is here

K = Kim is here

S = Sam is happy

Tableau



English

The ghost is not in the attic or the
vampire is not in the cellar.

The ghost is in the attic.

The vampire is in the cellar.

The butler is nervous and the cook
is suspicious.

Example 34

English

The ghost is not in the attic or the vampire is not in the cellar.

The ghost is in the attic.

The vampire is in the cellar.

The butler is nervous and the cook is suspicious.

Key

G = The ghost is in the attic

V = The vampire is in the cellar

B = The butler is nervous

C = The cook is suspicious

Example 34

English

The ghost is not in the attic or the vampire is not in the cellar.

The ghost is in the attic.

The vampire is in the cellar.

The butler is nervous and the cook is suspicious.

Key

G = The ghost is in the attic

V = The vampire is in the cellar

B = The butler is nervous

C = The cook is suspicious

Tableau

(1) $(\neg G \vee \neg V)$

(2) G

(3) V

(4) $B \wedge C$

Example 34

English

The ghost is not in the attic or the vampire is not in the cellar.

The ghost is in the attic.

The vampire is in the cellar.

The butler is nervous and the cook is suspicious.

Key

G = The ghost is in the attic

V = The vampire is in the cellar

B = The butler is nervous

C = The cook is suspicious

Tableau

(1) $(\neg G \vee \neg V)$

(2) G

(3) V

(4) $\neg((B \wedge C))$

Example 34

English

The ghost is not in the attic or the vampire is not in the cellar.

The ghost is in the attic.

The vampire is in the cellar.

The butler is nervous and the cook is suspicious.

Key

G = The ghost is in the attic

V = The vampire is in the cellar

B = The butler is nervous

C = The cook is suspicious

Tableau

$$\begin{array}{l} (1) (\neg G \vee \neg V) \checkmark \\ \quad | \\ (2) G \\ \quad | \\ (3) V \\ \quad | \\ (4) \neg((B \wedge C)) \\ \quad | \\ \quad [1] \\ (5) \neg G \quad (6) \neg V \end{array}$$

Example 34

English

The ghost is not in the attic or the vampire is not in the cellar.

The ghost is in the attic.

The vampire is in the cellar.

The butler is nervous and the cook is suspicious.

Key

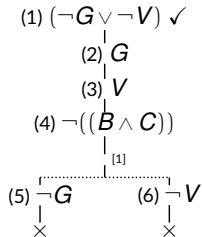
G = The ghost is in the attic

V = The vampire is in the cellar

B = The butler is nervous

C = The cook is suspicious

Tableau



English

The penguin is wearing a hat and
the walrus is not playing the tuba.

the penguin is wearing a hat or the
walrus is playing the tuba.

Example 35

English

The penguin is wearing a hat and
the walrus is not playing the tuba.

the penguin is wearing a hat or the
walrus is playing the tuba.

Key

P = The penguin is wearing a hat

W = The walrus is playing the tuba

Example 35

English

The penguin is wearing a hat and
the walrus is not playing the tuba.

the penguin is wearing a hat or the
walrus is playing the tuba.

Key

P = The penguin is wearing a hat

W = The walrus is playing the tuba

Tableau

(1) $(P \wedge \neg W)$

(2) $P \vee W$

Example 35

English

The penguin is wearing a hat and
the walrus is not playing the tuba.

the penguin is wearing a hat or the
walrus is playing the tuba.

Key

P = The penguin is wearing a hat

W = The walrus is playing the tuba

Tableau

(1) $(P \wedge \neg W)$

(2) $\neg((P \vee W))$

Example 35

English

The penguin is wearing a hat and
the walrus is not playing the tuba.

the penguin is wearing a hat or the
walrus is playing the tuba.

Key

P = The penguin is wearing a hat

W = The walrus is playing the tuba

Tableau

(1) $(P \wedge \neg W) \checkmark$

(2) $\neg((P \vee W))$

|^[1]

(3) P

(4) $\neg W$

Example 35

English

The penguin is wearing a hat and
the walrus is not playing the tuba.

the penguin is wearing a hat or the
walrus is playing the tuba.

Key

P = The penguin is wearing a hat

W = The walrus is playing the tuba

Tableau

$$\begin{array}{l} (1) (P \wedge \neg W) \checkmark \\ (2) \neg((P \vee W)) \checkmark \\ \quad | \\ \quad [1] \\ (3) P \\ \quad | \\ (4) \neg W \\ \quad | \\ \quad [2] \\ (5) \neg P \\ \quad | \\ (6) \neg W \end{array}$$

Example 35

English

The penguin is wearing a hat and
the walrus is not playing the tuba.

the penguin is wearing a hat or the
walrus is playing the tuba.

Key

P = The penguin is wearing a hat

W = The walrus is playing the tuba

Tableau

$$\begin{array}{l} (1) (P \wedge \neg W) \checkmark \\ (2) \neg((P \vee W)) \checkmark \\ \quad | \\ \quad [1] \\ (3) P \\ \quad | \\ (4) \neg W \\ \quad | \\ \quad [2] \\ (5) \neg P \\ \quad | \\ (6) \neg W \\ \quad | \\ \quad \times \end{array}$$