

## Some Examples of wff and malformed formulas

1.  $P \vee Q \vee S$

It's missing some brackets.

2.  $P \vee (Q \vee S)$

OK.

3.  $(P \vee Q) \vee S$

OK. Notice how the positioning of the brackets differ between this and the previous sentence. So this and the previous are distinct sentences.

4.  $[(T \vee Z) \vee W] \vee \neg[T \wedge (S \wedge W)]$

OK.

5.  $(T \vee Z) \vee W] \vee \neg[T \wedge (S \wedge W)$

Notice some brackets went missing.

6.  $[(Y \vee Q) \wedge (L \vee Q)] \wedge (Y \wedge L)$

OK.

7.  $[(\vee Q) \vee (Y \wedge S)] \wedge (W \wedge S)$

Look at the first  $\vee$ .

8.  $[(R \vee P) \vee (S \wedge Q)] \wedge \{R \vee [\neg S \vee (L \vee R)]\}$

OK.

9.  $[W \wedge (P \vee Q)] \wedge Q \vee (Z \wedge P)$

Missing some brackets. This would work:

$$\{[W \wedge (P \vee Q)] \wedge Q\} \vee (Z \wedge P)$$

also

$$[W \wedge (P \vee Q)] \wedge [Q \vee (Z \wedge P)]$$

10.  $[(P \wedge S) \vee R] \wedge R$

The first opening brackets has no mathing closing bracket.

11.  $M \vee M$

OK.

12.  $\neg\neg S \vee [(Z \vee T) \vee \neg P]$

OK.

13.  $\{[(Z \vee Q) \wedge PP] \wedge R\} \wedge [(Q \vee Z) \wedge R]$

Notice  $PP$  has two sentences next to each other.

14.  $[(Y \vee L) \wedge R] \vee [(Y \wedge L) \vee]$

Look at the last  $\vee$ .

15.  $\neg(Z \vee Q) \wedge [Y(T \wedge P)]$

Look at  $Y$ .

16.  $(S \wedge Q) \vee \neg S$

OK.

17.  $[L \wedge (Q \vee M)] \vee \{[\{\{\vee (Y \wedge Y)\} \wedge (M \vee L)\}]$

It has some extra brackets.