

N

W

Z

R

Q

Z Z

You MUST show your work to get credit.

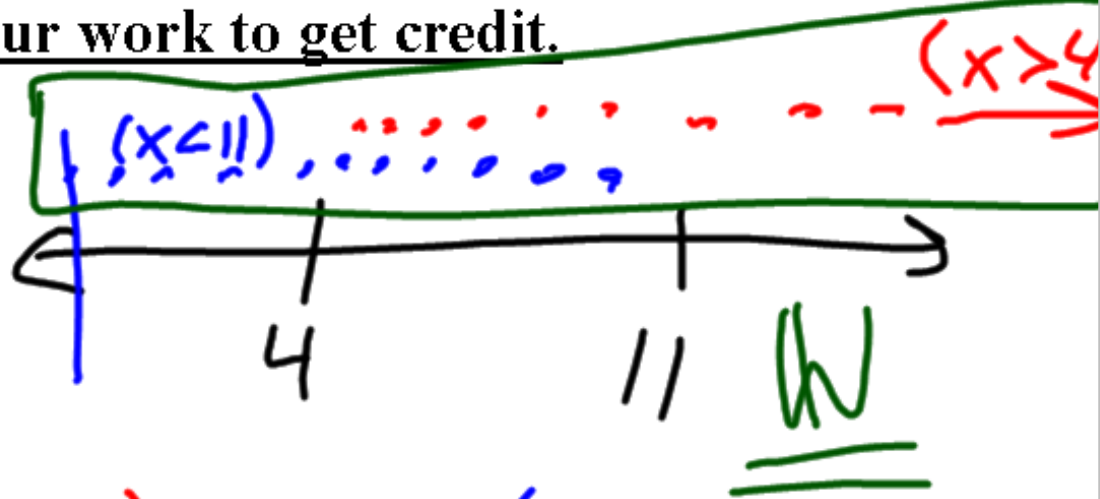
14. Truth Value of Question 11: $P \vee \neg F = F \vee F = \underline{\underline{F}}$

16. Truth Value of Question 13: $\sim(q \vee r) = \sim(T \vee F) = \sim(T) = \underline{\underline{F}}$

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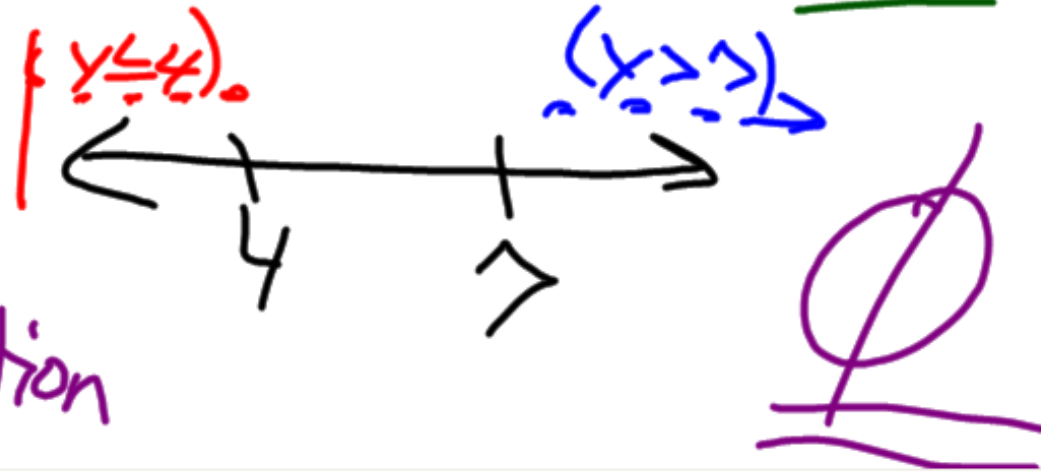
a) $(x < 11) \vee (x > 4)$

or
union



b) $(y > 7) \wedge (y \leq 4)$

and
intersection



1. $N \rightarrow \{1, 2, 3, \dots\}$
2. $W \rightarrow \{0, 1, 2, 3, \dots\}$
3. $Z \rightarrow \{\dots, -2, -1, 0, 1, 2, \dots\}$
4. $R \rightarrow \{\dots, -2, -1, 0, 1, 2, \dots\}$
5. $Q \rightarrow \{\dots, -2, -1, 0, 1, 2, \dots\}$
- Fill in the blanks. $\{\dots, -2, -1, 0, 1, 2, \dots\}$ or $\frac{\mathbb{Z}}{\mathbb{Z}}$

21. Complete the Truth Table. Careful of the symbols!

x	u	$\sim x$	$\sim u$	$(u \wedge \sim x)$	$(\sim u \wedge x)$	$(u \wedge \sim x) \vee (\sim u \wedge x)$
T	T	F	F	F	F	F
T	F	T	T	T	T	T
F	T	F	F	F	F	F
F	F	T	T	F	F	F