

§2.5: Linear & Vertical \angle 's Conjectures

Quiz B topics:

* inductive reasoning

* what it is

* what's a conjecture?

* examples:

* visual patterns: **, ***, ****, _____

* find the n th element in an arithmetic sequence (rule: $__n + __$)

* deductive reasoning

* what it is

* examples: 2-column proofs; see notes & HW

* rules of algebra (used in proofs, deductive reasoning)

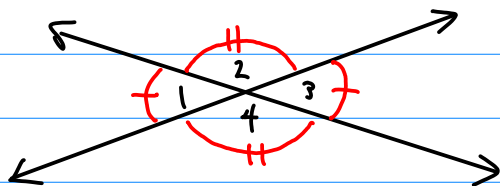
* ex: if $a = b$ & $c \neq 0$, then $a/c = b/c \iff$ name the rule

* given $5(x + 3) = 30$,

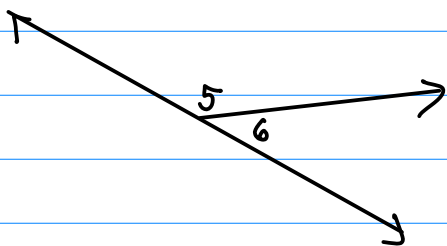
* solve the eqn

* construct the solution as a 2-column proof

* Vertical \angle 's Conjecture: ~~If 2 \angle 's are vertical \angle 's, then the \angle 's are \cong .~~ Vertical \angle 's are \cong .



* Linear Pairs Conjecture: If 2 \angle 's form a linear pair, then the \angle 's are supplementary.



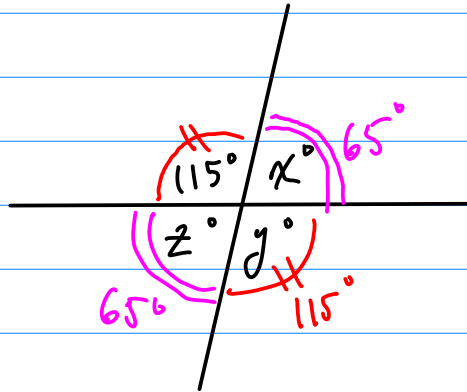
$\angle 5$ & $\angle 6$ are supp.



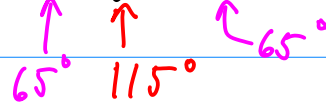
$\therefore m\angle 5 + m\angle 6 = 180^\circ \leftarrow$ Def'n of
Supp. \angle 's

\uparrow
"therefore"

Ex:

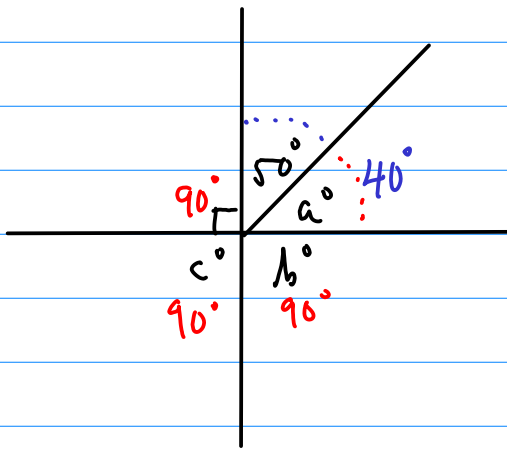


Find x , y , & z .



$$\begin{array}{r} 180 \\ - 115 \\ \hline 65 \end{array}$$

Ex:



$$a^\circ = \underline{40^\circ}$$

$$b^\circ = \underline{90^\circ}$$

$$c^\circ = \underline{90^\circ}$$

* Converse:

If it is hot, then it is sunny.] TRUE

converse version:

If it is sunny, then it is hot.] FALSE

↪ COUNTEREXAMPLE to disprove the converse above:
It's sunny but cold since it's winter.