



Universe: Every figure above.

Model:

Names	Predicates	Evaluate the following formulas:	T/F
a: Alvin	B: blue	1. $\forall x \sim Lxa \ \& \ Lcb$	
b: Bo	R: red	2. $\forall x(Rx \rightarrow \exists yKxy)$	
c: Cathy	G: green	3. $\forall x((Bx \ \& \ Tx) \rightarrow \exists z(Gz \ \& \ Kxz))$	
d: Dylan	S: square	4. $\forall x(Tx \rightarrow (Bx \vee Rx))$	
e: Elton	T: triangular	5. $\exists x(Cx \ \& \ \sim \exists y(Kxy \ \& \ Ty))$	
f: Fenwick	C: circular	6. $\exists x(Adx \ \& \ (Gx \ \& \ Sx))$	
g: Guillermo	A: above	7. $(Ta \vee Cb) \leftrightarrow \forall xCx$	
h: Hannah	L: left of	8. $\forall x((Cx \vee Bx) \vee Rx)$	
	K: in contact with	9. $\exists x(Cx \rightarrow Bb)$	
		10. $\forall x \forall y(Kxy \rightarrow \sim Lxy)$	
		11. $(Ra \vee Aab) \rightarrow (Rg \ \& \ \exists y(Ry \ \& \ Kgy))$	
		12. $\forall x \sim Lfx$	
		13. $\forall x \forall y \forall z((Lxy \ \& \ Lyz) \rightarrow Lxz)$	
		14. $\forall x \forall y(\sim Kxy \rightarrow (Sx \ \& \ \sim Gx))$	
		15. $\exists x(Cx \ \& \ \forall y(Ayx \rightarrow Ayy))$	
		16. $\forall x \forall y((Cx \ \& \ Cy) \rightarrow \sim(Axy \vee Lxy))$	
		17. $Kgf \leftrightarrow (Ahc \ \& \ Gc)$	
		18. $\exists x \forall y(\sim Lxy \rightarrow (Ty \vee Sy))$	
		19. $\sim(Lhb \ \& \ Ahb) \rightarrow Cf$	
		20. $\exists x \exists y((Cx \ \& \ Ty) \ \& \ \sim Kxy)$	
		21. $\forall x(Tx \rightarrow (\exists yCy \ \& \ Kxy))$	

Notes:

'x is above y' means 'every part of x is higher on the page than every part of y'

'x is to the left of y' means 'every part of x is to the left of every part of y'

It is possible for x to be above y and in contact with y.

It is possible for x to be to the left of y and in contact with y.