$$\mathtt{G}\,\varphi \stackrel{\mathbf{n}}{=} \neg\mathtt{F}\neg\varphi$$

$$\stackrel{\mathbf{n}}{=} \neg(true\,\mathtt{U}\,\neg\varphi)$$

$$\stackrel{\mathtt{dsc}}{=} \neg(true\,\mathtt{U}\,(\neg\varphi \wedge sing))$$

$$\stackrel{\mathtt{t}}{=} \neg(true\,\mathtt{U}\,(\neg\boxed{\varphi} \wedge\ sing\ \wedge\ alive))$$