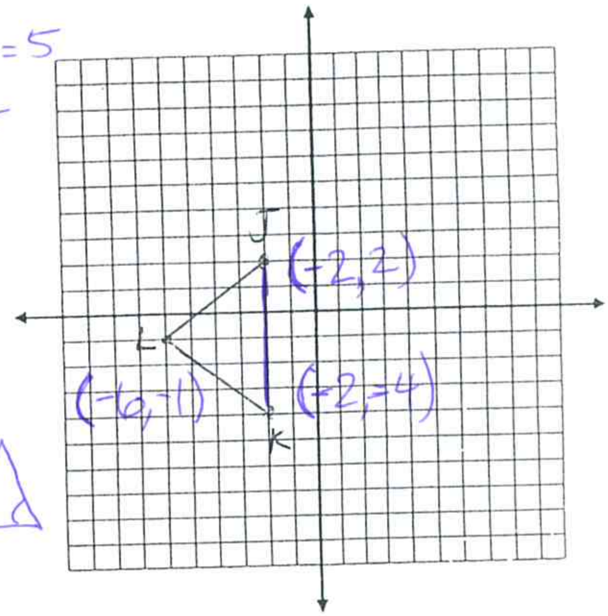
3. Prove that $\angle J \cong \angle K$ in $\triangle JKL$

Show $LJ = LK$ since both are 5

$LJ = \sqrt{(-2--6)^2+(2--1)^2} = \sqrt{4^2+3^2} = \sqrt{16+9} = \sqrt{25} = 5$

$LK = \sqrt{(-2--6)^2+(-1--4)^2} = \sqrt{4^2+3^2} = \sqrt{16+9} = \sqrt{25} = 5$




Since $LJ = LK$, $\triangle JKL$ is isosceles. Therefore, $\angle J \cong \angle K$ by If $\triangle$, then $\triangle$

4. Prove $\triangle DEF \cong \triangle$ ~~FGH~~ HG~~H~~F

Show $DE = HG$ since both are $2\sqrt{5}$

$EF = GF$ since both are $2\sqrt{10}$

$DF = HF$ since both are $2\sqrt{5}$

$DE = \sqrt{(-6--8)^2+(6-2)^2} = \sqrt{2^2+4^2} = \sqrt{4+16} = \sqrt{20} = \sqrt{4\cdot 5} = 2\sqrt{5}$

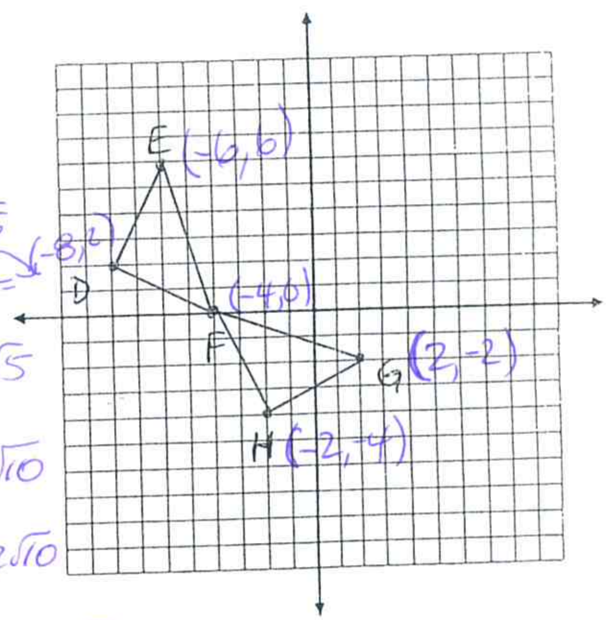
$HG = \sqrt{(2--2)^2+(-2--4)^2} = \sqrt{4^2+2^2} = \sqrt{16+4} = \sqrt{20} = \sqrt{4\cdot 5} = 2\sqrt{5}$

$EF = \sqrt{(4--6)^2+(6-0)^2} = \sqrt{2^2+6^2} = \sqrt{4+36} = \sqrt{40} = \sqrt{4\cdot 10} = 2\sqrt{10}$

$GF = \sqrt{(2--4)^2+(0--2)^2} = \sqrt{6^2+2^2} = \sqrt{36+4} = \sqrt{40} = \sqrt{4\cdot 10} = 2\sqrt{10}$

$DF = \sqrt{(-4--8)^2+(2-0)^2} = \sqrt{4^2+2^2} = \sqrt{16+4} = \sqrt{20} = \sqrt{4\cdot 5} = 2\sqrt{5}$

$HF = \sqrt{(-2--4)^2+(0--4)^2} = \sqrt{2^2+4^2} = \sqrt{4+16} = \sqrt{20} = \sqrt{4\cdot 5} = 2\sqrt{5}$




Since 3 sides of one $\triangle$ are equal to 3 sides of another $\triangle$, $\triangle DEF \cong HGF$ by SSS.