Internat. J. Math. & Math.
Vol. 4 No. 2 (1981) 413-414

CORRIGENDUM

THE GEOMETRY OF GL(2,q) IN TRANSLATION PLANES OF EVEN ORDER q^2

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(Received October 24, 1980)

In [1] the translation planes of even order q^2 which admit GL(2,q) as a collineation group were investigated. Due to an error in a previous article, the Dempwolff plane of order 16 was overlooked.

To correct the situation, we appeal to the following theorems:

I. (Johnson [2], corollary to the main theorem):

Let π be a translation plane of order $2^{2r} \neq 4$ or 16 that admits a collineation group $\mathcal{G}$ isomorphic to $SL(2,2^r)$. If the Sylow 2-subgroups fix Baer subplanes π_i pointwise then the 2^r+1 subplanes π_i all belong to a derivable net.

II. (Johnson [3]):

Let π be a translation plane of order 16 that admits SL(2,4) as a collineation group. Then π is Desarguesian, Hall or Dempwolff.

It was originally thought that I. was valid for planes of order 16 and because of this the Dempwolff planes were overlooked. By I. the results of [1] are valid for planes of order $\neq 16$ and by II. the only exceptional plane of order 16 is the Dempwolff plane.

Thus we have:

Theorem (to replace (2.7) [1]):

Let π be a translation plane of even order q^2 which admits GL(2,q) as a collineation group. Then the fixed point space of each Sylow 2-subgroup is a component, Baer subplane or Baer subline.

(i) π is a Desarguesian if and only if the Sylow 2-subgroups fix components pointwise.

(ii) (a) If the order of $\pi \neq 16$, π is Hall if and only if the Sylow 2-subgroups fix Baer subplanes pointwise.

(b) If the order of π is 16 and the Sylow 2-subgroups fix Baer subplanes pointwise, then, π is Hall if and only if the subplanes are in the same net of degree 5 and π is Dempwolff if and only if the subplanes do not lie in the same net of degree 5.

(iii) π is Ott-Schaeffer if and only if the Sylow 2-subgroups fix Baer sublines pointwise.

REFERENCES

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2. JOHNSON, N. L. Addendum to "The Geometry of SL(2,q) in Translation Planes of Even Order", (To appear.)

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