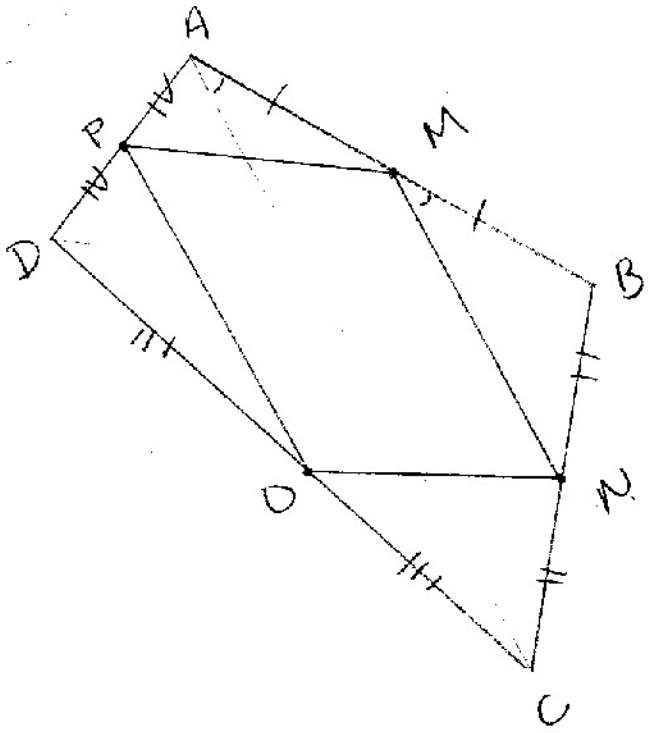
4C

4.3



1. ABCD is a quadrilateral	1. given
2. M, N, O, P are midpts	2. given
3. construct diagonal $\overline{AC}$	3. construct
4. $\angle B \cong \angle B$	4. same $\angle$
5. $\frac{BM}{BA} = \frac{BN}{BC} = 1/2$	5. M & N are midpts
6. $\triangle MBN \sim \triangle ABC$	6. SAS
7. $\angle BMN = \angle BAC$	7. def of similarity
8. $MN \parallel AC$	8. alt int $\angle$'s, vert $\angle$'s
9. $\triangle ODP \sim \triangle DA$	9 same argument as ↑
10 $OP \parallel CA$	10 alt int $\angle$'s, vert $\angle$'s
11. $OP \parallel MN$	11. both $\parallel$ to $\overline{AC}$

use same argument to show $PM \parallel ON$

$\therefore$ MNOP is a $\parallel$ ogram