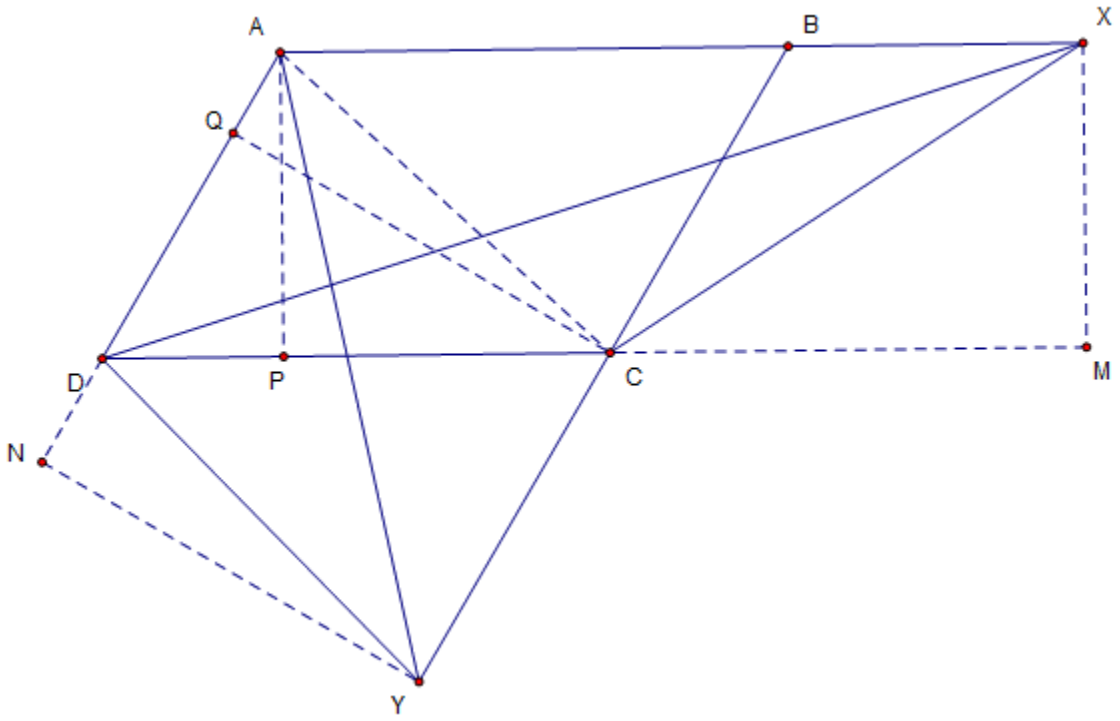
HW 6 - 8



1. Draw the height of ΔDCX, XM, on base DC; height of ΔADY, YN, on base AD.
2. Draw the height of ΔADC, AP, on base DC; height of ΔADC, CQ, on base AD.
3. By definition of parallelogram, AB//DC, AD//BC.
4. By Theorem 15, as XM ⊥ DC, AP ⊥ DC, XM=AP. Similarly, YN=CQ.
5. By Theorem 7, Area = ½ base×height.
6. From 4 and 5, Area of ΔDCX = Area of ΔADC; Area of ΔADY = Area of ΔADC.
7. By algebra, Area of ΔDCX = Area of ΔADY. QED.

Note (DG): As part of this proof you can conclude that the area of each of these two triangles is half the area of the parallelogram. Can you think about a way to say this precisely (without naming points)?