

0.47
4

$DC = 2x, AB = x = BC = AD$

1/2

$30 = 2x + 2x + 2x$
 $x = 5$

$AP = x, PB = x$ \leftarrow $AB \parallel CD$
 $AB = \frac{1}{2} CD$

$120^\circ = \angle A = \angle B, \angle D = \angle C = 60^\circ$

1/2

(S.S.) $\triangle NAP \cong \triangle CAD$
 \downarrow
 $NA = AC$
 $PA = AD$

$60^\circ = \angle ADC = \angle NPA$
 $\triangle NAP = \triangle DAC$
 $AP = DA$

$\triangle NPCD$

$PMED$ \triangle

$ND = PC = DP$

$90^\circ = \angle CAD$
 $\angle CBD = 90^\circ$
 $(3.S.S.) \triangle ADC \cong \triangle BCD$

$BC = 5$
 $ND = CM = 10$

$(30, 60, 90): \triangle BMC$

$\frac{AB + CD}{2} = 7.5$

$DC + CM + NM + ND = 10 + 10 + 10 + 20 = 50$