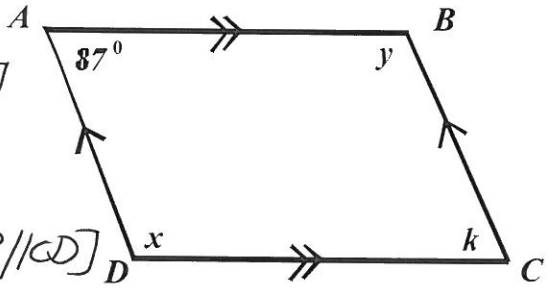
Werkkaart 2015-8AO-00003(1)

(1) Bepaal die waardes van x, y en / of k. Toon alle bewerkings en gee volledige redes.

(a)



$k = 87°$ [Teenoorst. $\angle$e van parm]

$x + 87° = 180°$ [ko-binne $\angle$e; AB // CD]

$\therefore x = 180° - 87°$

$\therefore x = 93°$

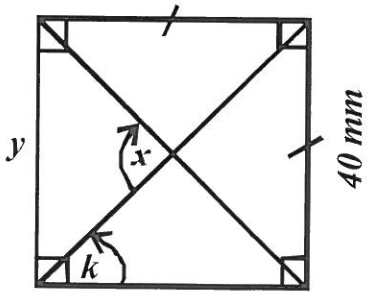
$\therefore y = 93°$ [Teenoorst. $\angle$e van parm]

(b)

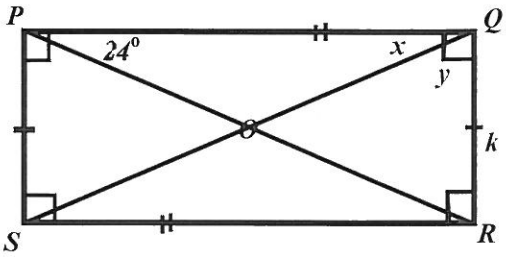
$x = 90°$ [Diagonale van vierkant]

$y = 40$ mm [Sye van vierkant =]

$k = 45°$ [Diagonaal van vierkant halveer $\angle$e]



(c) SQ = 17 en SR = 15



$PO = OQ$ [Diag. van reghoek]

$\therefore x = 24°$ [$\angle^e$ teenoor gelyke sye]

$\therefore y = 90° - 24°$ [$\angle^e$ van reghoek $= 90°$]

$\therefore y = 66°$

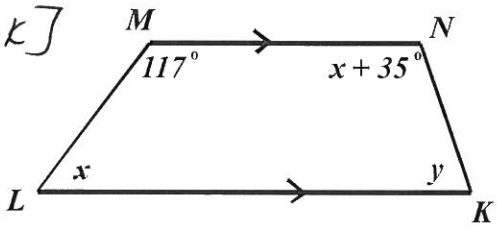
$SQ^2 = QR^2 + SR^2$ [Pythagoras]

$(17)^2 = k^2 + (15)^2$

$\therefore k^2 = 289 - 225$

$\therefore k = \sqrt{64} = 8$

(d)



$x + 117° = 180°$ [ko-binne $\angle^e$; $MN \parallel LK$]

$\therefore x = 180° - 117° = 63°$

$\therefore \hat{N} = x + 35°$

$= 63° + 35°$

$\therefore \hat{N} = 98°$

maar $\hat{N} + y = 180°$ [ko-binne $\angle^e$; $MN \parallel KL$]

$\therefore y = 180° - 98°$

$\therefore y = 82°$

(2) Gee die definisie van die volgende vierhoeke:

(a) Parallelogram

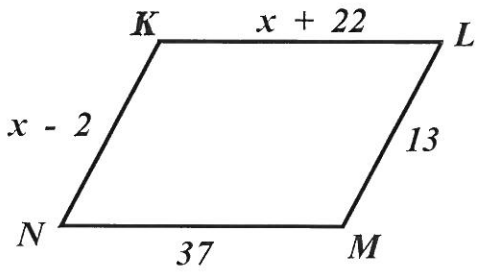
'n Parallelogram is 'n vierhoek waarvan die oorstaande sye ewewydig is.

(b) Trapesium

'n Trapesium is 'n vierhoek waarvan een paar oorstaande sye ewewydig is.

(3) Bewys dat die volgende vierhoeke, parallelogramme is. Toon alle stappe en berekeninge.

(a) $x = 15$ cm



$KN = x - 2 = 15 - 2 = 13$ cm

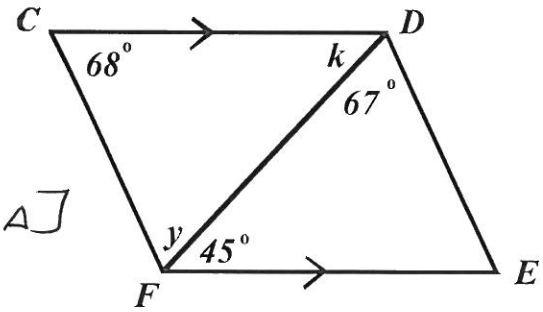
$\therefore KN = LM$

$KL = x + 22 = 15 + 22 = 37$ cm

$\therefore KL = NM$

$\therefore$ KLMN is 'n parallelogram want die teenoorstaande sye is ewe lank.

(b)



$k = 45°$ [verw. $\angle^e$; CD // EF]

$\therefore y = 180° - 45° - 68°$ [binne $\angle^e$ van $\triangle$]

$\therefore y = 67°$

$\therefore C\hat{F}D = F\hat{D}E = 67°$

maar dit is verw. $\angle^e$

$\therefore$ CF // DE

$\therefore$ CDEF is 'n parallelogram want die oorstaande sye is //.

(4) (a) Konstrueer $AB = 6$ cm.

(b) Konstrueer $C\hat{A}B = 60°$.

(c) Merk $AC = 60$ mm.

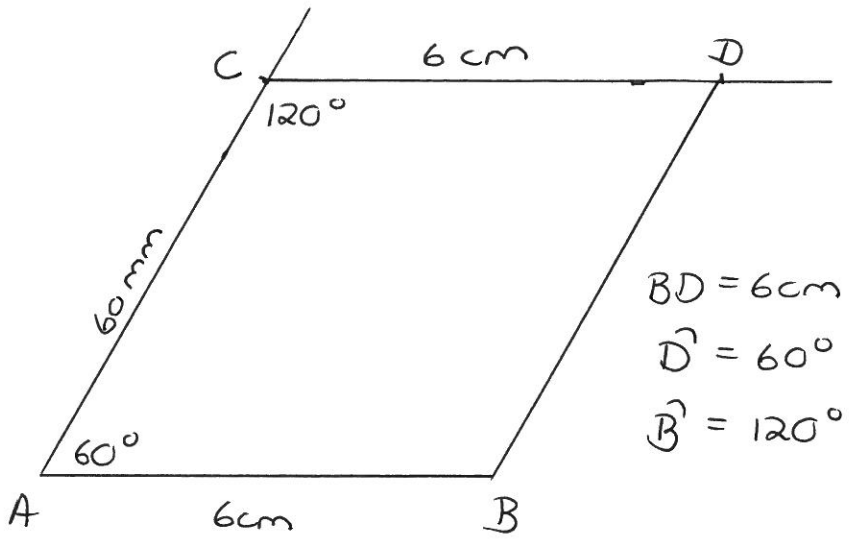
(d) Konstrueer $A\hat{C}D = 120°$, met $CD = 6$ cm.

(e) Verbind B en D.

(f) Meet: DB, $\hat{B}$ en $\hat{D}$

(g) Watter tipe vierhoek is $ABDC$? Motiveer jou antwoord.

ABCD is 'n ruit, want die teenoorstaande $\angle^e$ is gelyk en al die sye is ewe lank.



(5) (a) Wat sal die som van die binnehoeke van 'n reëlmatige negehoek wees?

Som $= 180° \times (9 - 2)$

$= 180° \times (7)$

$= 1260°$

(b) Hoe groot sal elke individuele binnehoek van die reëlmatige negehoek wees?

Binne $\angle = \frac{1260°}{9} = 140°$

(c) Hoe groot sal 'n buitehoek van die reëlmatige negehoek wees?

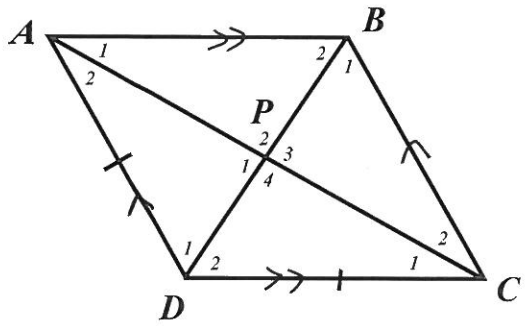
Buite $\angle = 180° - 140°$ [$\angle^e$ op reguit lyn]

$= 40°$ [en $40° \times 9 = 360°$]

(d) Gee 'n sinoniem vir 'n reëlmatige negehoek.

Nonagoon

(6) In die skets is AB // DC en AD // BC. Bestudeer die skets en vul die ontbrekende gedeeltes in:



Bewering:	Rede:
(a) ABCD is 'n parallelogram	Teenoorst. sye is //
(b) ABCD is 'n ruit	Aangrensende sye is =
(c) $\hat{A}_1 = \hat{C}_1$	Verw. $\angle^e$; AB // CD
(d) $\hat{D}_1 = \hat{D}_2$	Diag. v. ruit halveer $\angle^e$
(e) $\hat{P}_1 = \hat{P}_2 = \hat{P}_3 = \hat{P}_4 = 90^\circ$	Diagonale ⊥ op mekaar
(f) $AB = DC = AD = BC$	Teenoorstaande sye van ruit ewe lank