Kuier Winterskool 2020
Les 14

Vraag 1

1.1 $\frac{AN}{AM} = \frac{AK}{AB}$ (lyn ∥ een sy ΔAMB)

$\frac{AN}{AM} = \frac{3}{2}$

1.2 $\frac{CL}{LK} = \frac{CM}{MN}$ (lyn ∥ een sy ΔCKN)

$\frac{CL}{LK} = \frac{23y}{2a}$

Maar $3a + 2a = 10y$
$5a = 10y$
$a = 2y$

$\therefore \frac{CL}{LK} = \frac{23y}{2(2y)}$

$\frac{CL}{LK} = \frac{23}{4}$

Vraag 2

2.1 $\hat{R} = x$ ($\angle$ tsn raaklyn + koord)
$TS = TV$ (raaklyn vanuit dies. pnt)
$\hat{V}_3 = x$ ($\angle$ teenoor gelyke sye)
$\hat{W}_3 = x$ (ooreenk. $\angle^e$; $RV \parallel WT$)

2.2.1 $\hat{W}_3 = \hat{V}_3 = x$ (Bewys in 2.1)
$\therefore$ WSTV is 'n koordevierhoek
Teenoorgestelde $\angle^e$ in dieselfde sirkelsegment

2.2.2 $\hat{W}_2 = x$ ($\angle^e$ in dies. sirkel segment)
$\hat{V}_1 = x$ (verwiss. $\angle^e$; $WT \parallel RV$)
$\therefore WR = WV$ (sye teenoor gelyke $\angle^e$)

2.2.3 In ΔWRV en ΔTSV
① $\hat{R} = \hat{S}_2 = x$ (bewys in 2.1)
② $\hat{V}_1 = \hat{V}_3 = x$ (bewys in 2.2.2)
③ $\hat{W}_1 = \hat{T}_2$ (Derde $\angle$ van Δ)

$\therefore \Delta WRV \parallel\parallel\parallel \Delta TSV$ (HHH)

2.2.4 $\frac{WR}{TS} = \frac{RV}{SV} = \frac{WV}{TV}$ ($\Delta WRV \parallel\parallel\parallel \Delta TSV$)

$\frac{WR}{TS} = \frac{RV}{SV}$

$WR \cdot SV = TS \cdot RV$

$\frac{WR}{SR} = \frac{KV}{SV}$ (lyn ∥ een sy ΔSRV)

$WR \cdot SV = SR \cdot KV$

$\therefore \frac{TS \cdot RV}{TS \cdot SR} = \frac{SR \cdot KV}{SR \cdot TS}$

$\frac{RV}{SR} = \frac{KV}{TS}$

Vraag 3

3.1 In ΔDEF en ΔDCT

$$\frac{EF}{DC} = \frac{9}{18} = \frac{1}{2}$$

$$\frac{FT}{CT} = \frac{5}{10} = \frac{1}{2}$$

$$\frac{TE}{Tm} = \frac{7}{14} = \frac{1}{2}$$

$\therefore \Delta DEF \,|||\, \Delta DCT$ (Alle sye in verh.)

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

3.2 As $E\hat{F}D = E\hat{C}D$ dan is CDEF 'n krh
Teenoorgestelde $\angle^e$ in dies. sirkelsegment

$\therefore D\hat{F}C = D\hat{E}C$ ($\angle^e$ in dies. sirkelsegm.)