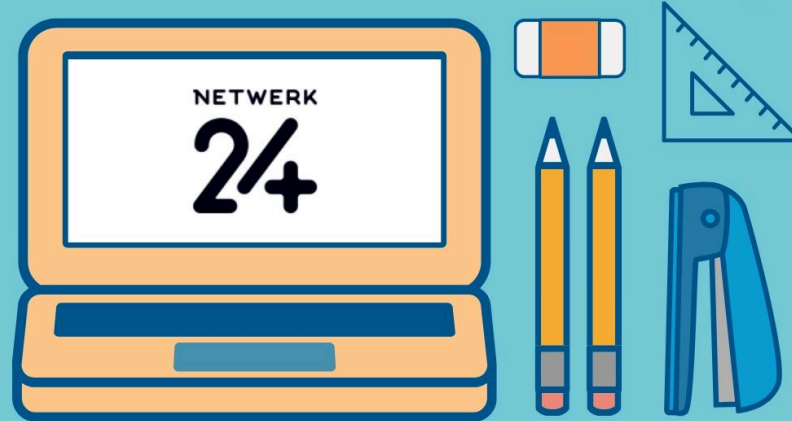


#MYSKOOL

AANLYN HULP

vir hoërskoolleerlinge



Les 12

Omtrek en oppervlakte (3).



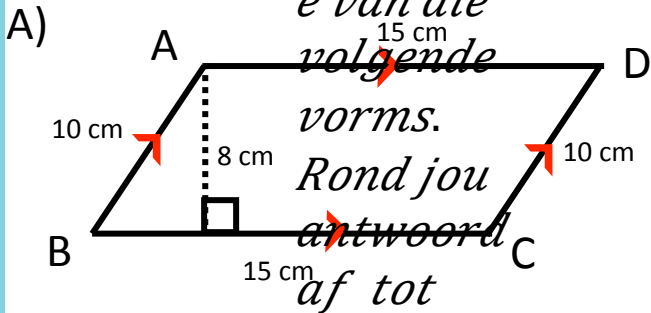
Vorm	Omtrek	Oppervlakte
<p>Parallelogram:</p>	$P = AB + BC + CD + AD$ $P = 2l + 2b$	$A = \text{basis} \times \perp \text{hoogte}$ <p><i>hoogte is altyd \perp op die basis.</i></p>
<p>Ruit:</p>	$P = 4s$	$A = \text{basis}(s) \times \perp \text{hoogte}$ <p><i>hoogte is altyd \perp op die basis.</i></p>



Vorm	Omtrek	Oppervlakte
<p>Vlieër:</p>	$P = a + a + b + b$ $P = 2a + 2b$	$A = \text{Oppv}\Delta ABC + \text{Oppv}\Delta ADC$ $A = 1/2 AC \times BE + 1/2 AC \times DE$ $A = 1/2 AC \times BD$ $A = 1/2$ $\times \text{hoeklyn1} \times \text{hoeklyn2}$ $A = \text{Oppv}\Delta ADB + \text{Oppv}\Delta CDB$ $A = 1/2 AB \times \perp h + 1/2 CD \times \perp h$
<p>Trapesium:</p>	$P = a + b + c + d$	$A = 1/2 h (AB + CD)$ $A = 1/2 (AB + CD) \times h$



1) Bereken die omtrek en oppervlakte van die volgende vorms. Rond jou antwoord af tot twee desimale syfers, waar nodig.

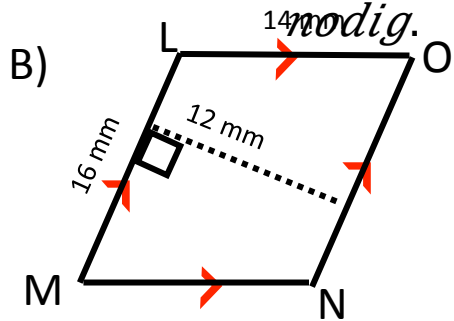


Omtrek:

$$P = 2l + 2b$$
$$P = 2(15) + 2(10)$$
$$P = 30 + 20$$
$$P = 50 \text{ e}$$

Oppervlakte:

$$A = \text{basis} \times \perp \text{hoogte}$$
$$A = (15)(8)$$
$$A = 120 \text{ cm}^2$$

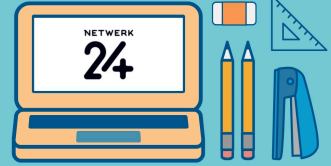


Omtrek:

$$P = 2l + 2b$$
$$P = 2(16) + 2(14)$$
$$P = 32 + 28$$
$$P = 60 \text{ e}$$

Oppervlakte:

$$A = \text{basis} \times \perp \text{hoogte}$$
$$A = (16)(12)$$
$$A = 192 \text{ cm}^2$$





2) $ABFG$ is
`n

parallelogram, $BCDE$

is `n ruit en
 $BEHJ$ is `n

Omtrek:

$$P = AB + BC + CD + DE + EF + FG + AG$$

$AB = 2$ Bereken
die omtrek
en

$AB = \sqrt{4}$ oppervlakt

$BC = CD = DE = \sqrt{3}$ [al 4 sye van `n ruit is ewe lank]

$EF = AG - BE$ volgende

$$EF = 3,73 - \sqrt{3} \text{ m.}$$

$EF = 2$ Rond jou

$FG = AB = 2$ [teenoorstaande sye van `n parm]

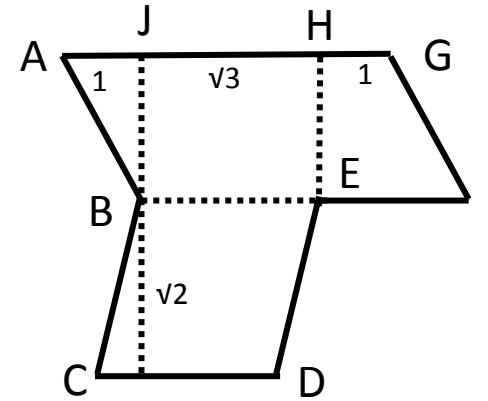
$AG = 1 + \sqrt{3} + 1$ af tot twee
desimale

$AG = 3,73$ syfers,

$AG = 3,73$ waar

$2 + 3(\sqrt{3}) + 2 + 2 + 3,73$

$$P = 14,93 \text{ e}$$



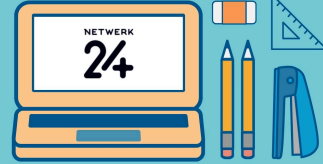
Oppervlakte:

$$A = \text{Oppv}(\text{parm}) + \text{Oppv}(\text{ruit})$$

$$A = b \times h + s \times h$$

$$A = ((3,73) \times \sqrt{3}) + (\sqrt{3} \times \sqrt{2})$$

$$A = 8,91 \text{ e}$$

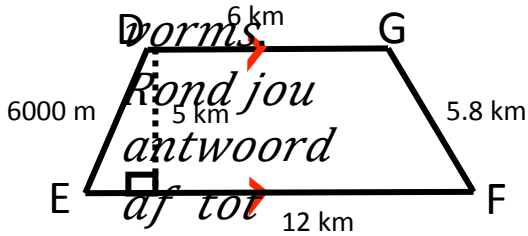




3) Bereken die omtrek en oppervlakte van die volgende

A) *Dorms*

Rond jou antwoord af tot twee desimale syfers, waar nodig.



Omtrek:

Herlei 6000 m na km
 $6000 \div 1000 = 6 \text{ km}$

$$P = a + b + c + d$$

$$P = 6 + 6 + 5,8 + 12$$

$$P = 29,8 \text{ km}$$

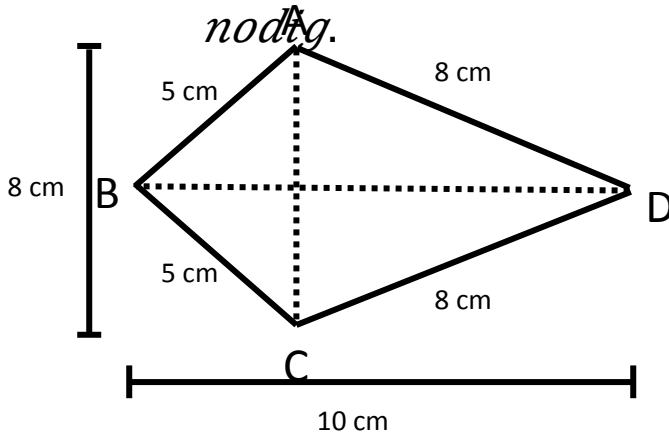
Oppervlakte:

$$A = 1/2 (DG + EF) \times h$$

$$A = 1/2 (6 + 12) \times 5$$

$$A = 45 \text{ km}^2$$

B)



Omtrek:

$$P = 2a + 2b$$

$$P = 2(5) + 2(8)$$

$$P = 10 + 16$$

$$P = 26 \text{ cm}$$

Oppervlakte:

$$A = 1/2 AC \times BD$$

$$A = 1/2 (8) \times (10)$$

$$A = 40 \text{ cm}^2$$





4) Bereken die omtrek en oppervlakte van die volgende vorms.



Rond jou antwoord af tot twee desimale syfers, waar nodig.

$$P=400 \text{ m}$$

Omtrek:

Herlei 5000 cm na m
 $5000 \div 100 = 50 \text{ m}$

$$P = a + b + c + d$$

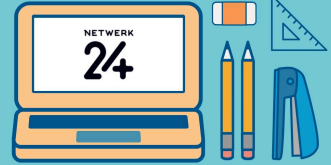
$$P = (120) + (50) + (180) + (50)$$

Oppervlakte:

$$A = 1/2 (MP + NO) \times h$$

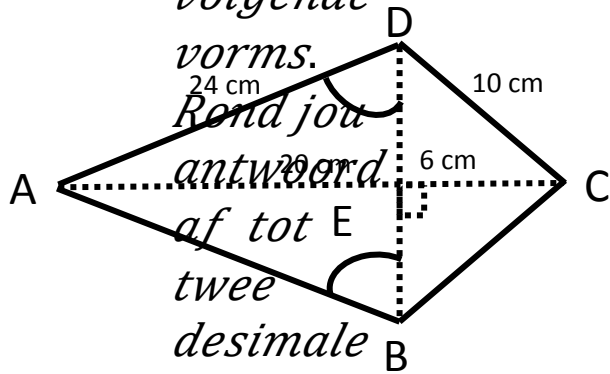
$$A = 1/2 (120 + 180) \times 40$$

$$A = 6000 \text{ m}^2$$





5) Bereken die omtrek en oppervlakte van die volgende vorms.
 Rond jou antwoord af tot twee desimale syfers, waar nodig.



Omtrek:

$$BC = CD = 10 \text{ cm [aangrensende sye]}$$

$$AD = AB = 24 \text{ cm [aangrensende sye]}$$

$$P = 2a + 2b$$

$$P = 2(10) + 2(24)$$

$$P = 20 + 48$$

$$P = 68 \text{ cm}$$

Oppervlakte:

$$A = 1/2 AC \times BD$$

$$A = 1/2 (26) \times (16)$$

$$A = 208 \text{ cm}^2$$

$$DE^2 = CD^2 - CE^2 \text{ (Stelling van Pythagoras)}$$

$$DE^2 = 10^2 - 6^2$$

$$\sqrt{DE^2} = \sqrt{64}$$

$$DE = 8 \text{ cm}$$

$$DE = BE = 8 \text{ cm [Hoeklyn halveer die ander een.]}$$

$$BD = 16 \text{ cm}$$





6) Bereken die omtrek en oppervlakte van die volgende vorm.

Rond jou antwoord af tot twee desimale syfers,

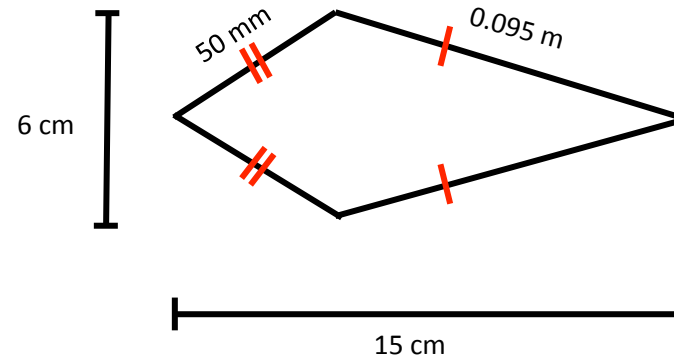
waar **Omtrek:** nodig.

Herlei 0,095 m na mm
 $0,095 \times 1000 = 95 \text{ mm}$

$$P = 2(50) + 2(95)$$

$$P = 100 + 190$$

$$P = 290 \text{ mm}$$

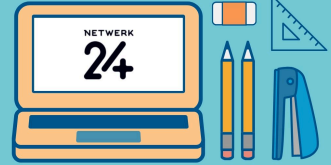


Oppervlakte:

$$A = 1/2 AC \times BD$$

$$A = 1/2 (15) \times (6)$$

$$A = 45 \text{ mm}^2$$





7) Bereken die omtrek en oppervlakte van die volgende

$AE=EC=8\text{ cm}$ [Hoeklyn halveer die ander een]

$=16\text{ cm}$

Rond jou

$AD^2 = AE^2 + DE^2$ (Stelling van Pythagoras)

$AD^2 = 8^2 + 18^2$

$AD^2 = \sqrt{388}$

$AD = 19,70\text{ cm}$

$AD = CD = 19,70\text{ cm}$ [aangrensende sye]

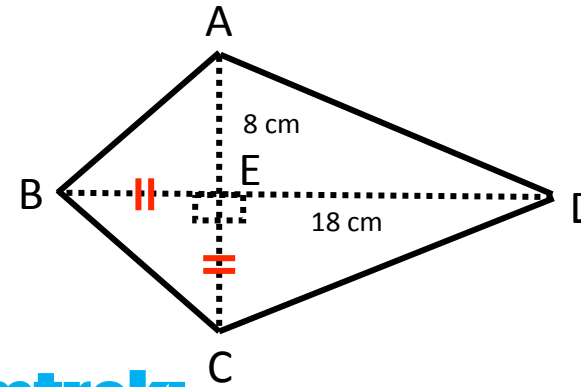
$CE = 8\text{ cm}$ [Gegee]

$BC^2 = BE^2 + EC^2$ (Stelling van Pythagoras)

$BC^2 = 8^2 + 8^2$

$BC^2 = \sqrt{128}$

$BC = 11,31\text{ cm}$



Omtrek:

$$P = 2a + 2b$$

$$P = 2(19,70) + 2(11,31)$$

$$P = 39,4 + 22,62$$

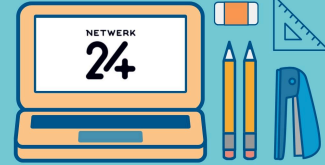
$$P = 62,02\text{ cm}$$

Oppervlakte:

$$A = \frac{1}{2} AC \times BD$$

$$A = \frac{1}{2} (16) \times (26)$$

$$A = 208\text{ cm}^2$$

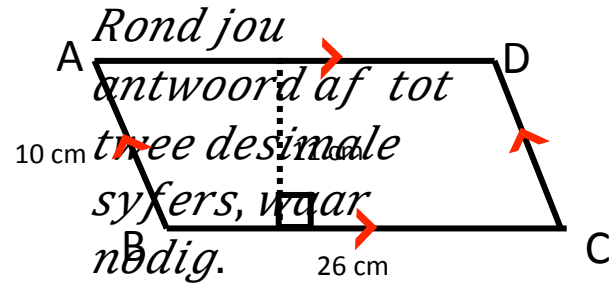




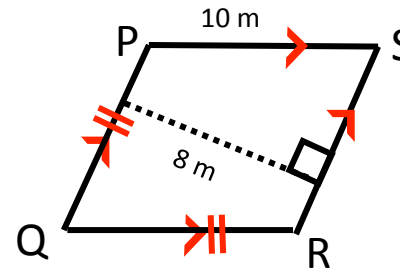
Ekstra oefening

Bereken die omtrek en oppervlakte van die volgende vorms.

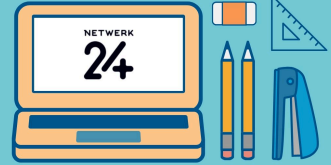
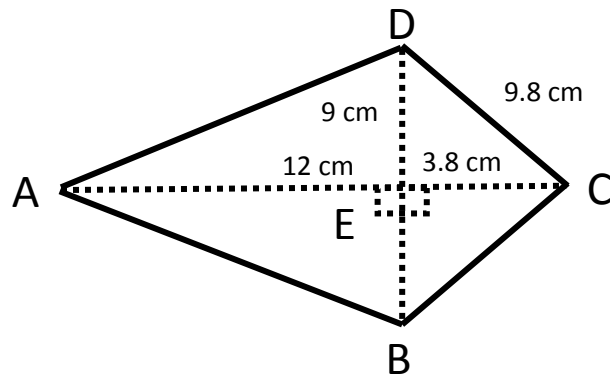
A)



B)



C)



Die einde van die les!

