Oppervlakte en omtrek van 2D-vorms:

Oppervlakte en omtrek:

1. Watter van hierdie bewerings oor die oppervlakte van 'n vorm is waar?

a) Oppervlakte = l x *b*.

_____

_____

_____

_____

b) Oppervlakte is die hoeveelheid buite-oppervlak in ‘n vorm.

_____

c) Oppervlakte is die aantal vierkante wat 'n oppervlak bedek.

_____

_____

_____

2. Watter van hierdie bewerings oor die omtrek van 'n vorm is waar?

a) Omtrek = 2l +2*b* of 2(l x *b*)

_____

_____

_____

_____

b) Omtrek is die afstand om die rand van 'n vorm.

_____

c) Omtrek is die lengte van die sye of rande bymekaar getel.

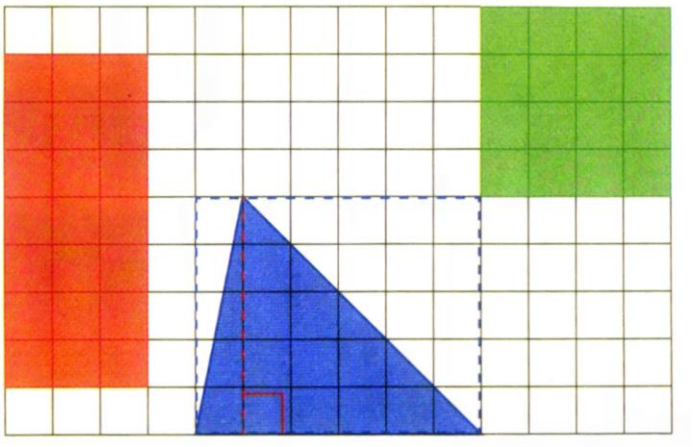
_____

_____

_____

Vierkante, reghoeke en driehoeke:

1. Bereken die oppervlakte en die omtrek van die volgende vorms, die lengtes van die skuinssye van die driehoek is 5,1 cm en 7,1 cm:



Oppervlakte

Reghoek

A = _____

= _____

Driehoek

Opp. =_____

_____

_____

_____

Vierkant

Opp. = _____

_____

_____

Omtrek

Reghoek

Omtrek v regh. = _____

= _____

= _____

= _____

Driehoek

Omtrek v. driehoek = _____

= _____

= _____

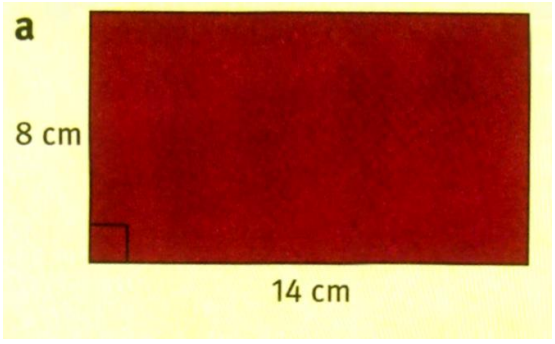
Vierkant

Omtrek v. vierkant = _____

= _____

= _____

2. Gebruik die formules om die oppervlakte en omtrek van die volgende te bereken:



Omtrek v. regh. = _____

= _____

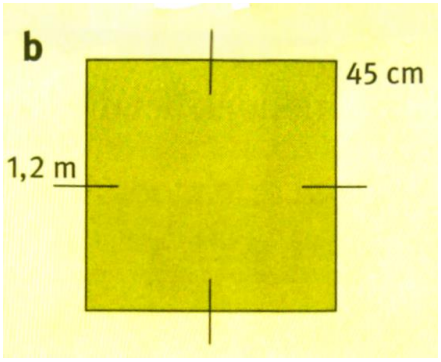
= _____

= _____

Opp. v. regh. = _____

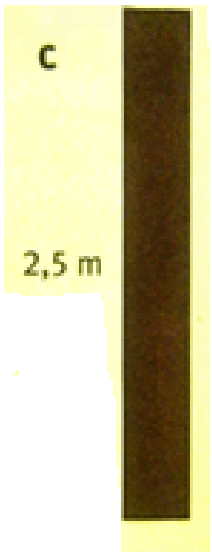
= _____

= _____



Omtrek v. vierkant = _____
= _____
= _____

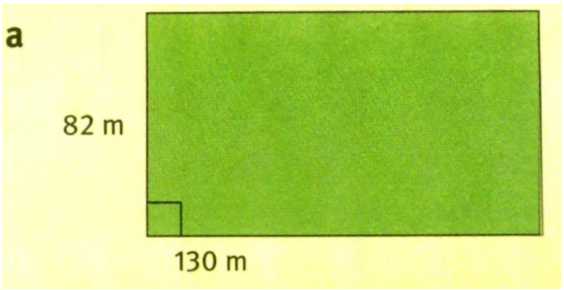
Opp. v. vierkant = _____
= _____
= _____



Omtrek v. regh. = _____
= _____
= _____
= _____

Opp. v. regh. = _____
= _____
= _____

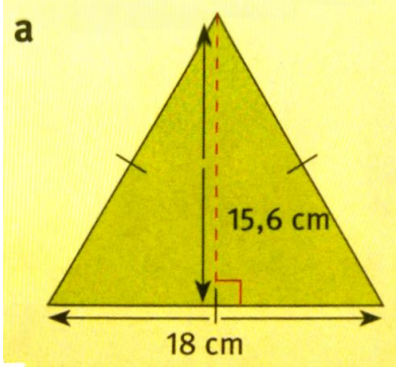
3. Bereken die oppervlakte en omtrek van die volgende:



Opp. v. regh. = _____
= _____
= _____

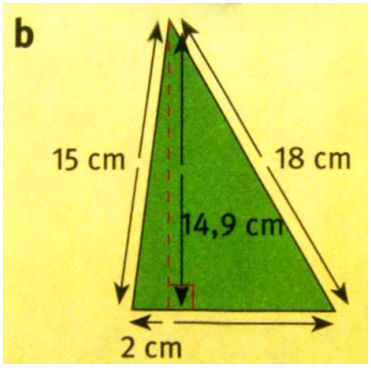
Omtrek v. regh. = _____
= _____
= _____
= _____

4. Bereken die oppervlaktes en omtrekke. Deel hierdie vorms in vierkante, reghoeke en driehoeke op ten einde die oppervlakte te bereken:



Omtrek v. driehoek = _____
= _____
= _____

Opp. v. driehoek =_____
=_____
= _____



Omtrek v. driehoek = _____

= _____

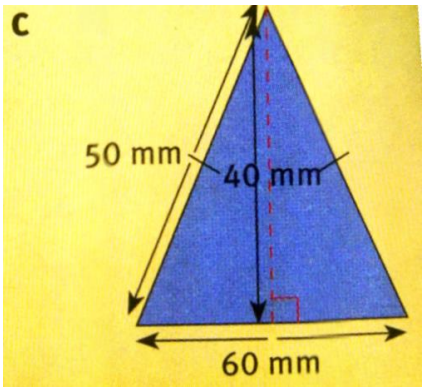
= _____

Opp. v. driehoek =_____

=_____

=_____

= _____



Omtrek v. driehoek =_____

= _____

= _____

Opp. v. driehoek =_____

=_____

=_____

=_____

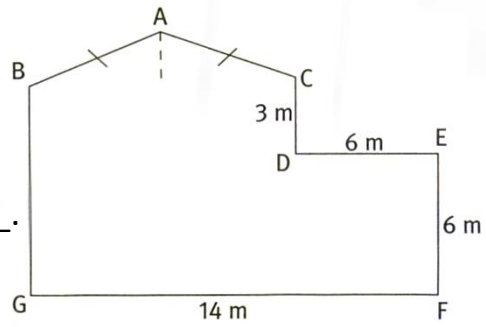
Veelhoeke:

1. Voltooi die volgende:

Om die oppervlakte van die vorm te bereken, moet ons:

Die komplekse vorm in drie verskillende vorms opdeel:

'n _____, 'n _____ en 'n _____.



2. Bereken die ontbrekende mates:

BG = _____

GH = _____

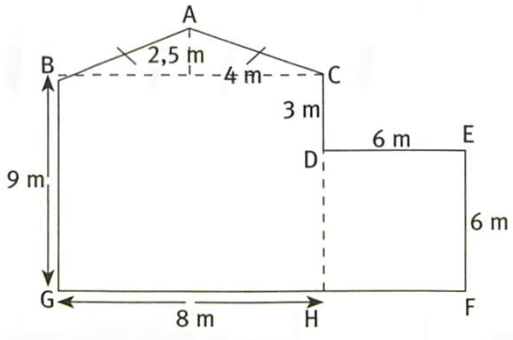
3. Bereken die oppervlakte van driehoek ABC:

Oppervlakte =_____

=_____

=_____

=_____



4. Bereken die oppervlakte van reghoek BCHG:

Oppervlakte = _____

= _____

= _____

5. Bereken die oppervlakte van vierkant DEFH:

Oppervlakte = _____

= _____

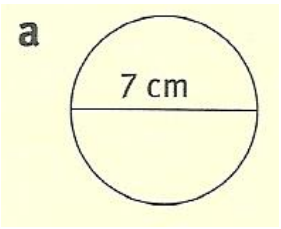
= _____

Totale oppervlakte = _____

Sirkels:

1. Gebruik die deursnitte om die omtrek vir elk van die sirkels hieronder te bereken.
Gebruik 3,14 as die waarde van π:

a

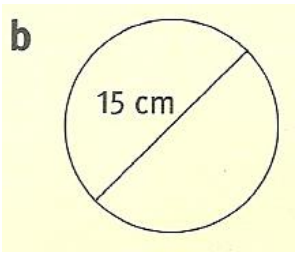


_____

= _____

= _____

b

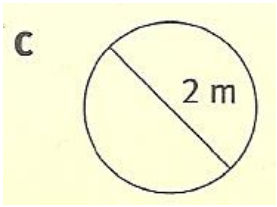


_____

= _____

= _____

c

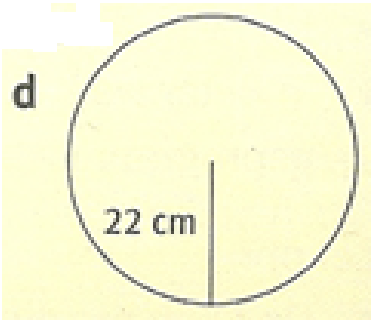


_____

= _____

= _____

d



_____

= _____

= _____

2.Bereken die omtrek van sirkelvormige houers wat die volgende deursnitte het:

a) 50 mm

Omtrek =_____

=_____

=_____

b) 23 cm

Omtrek =_____

= _____

= _____

c) 0,325 m

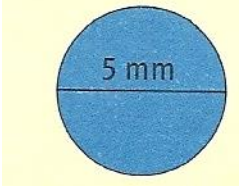
Omtrek =_____

=_____

=_____

3. Gebruik die deursnitte om die opervlakte vir elk van die volgende sirkels te bereken.
Gebruik 3,14 as die waarde van π:

a



r = _____

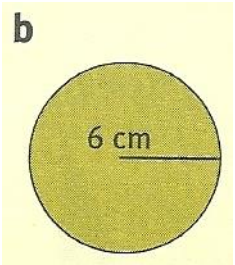
= _____

Opp. = _____

= _____

= _____

b

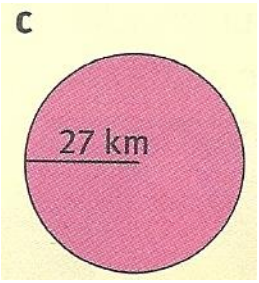


Opp. =_____

= _____

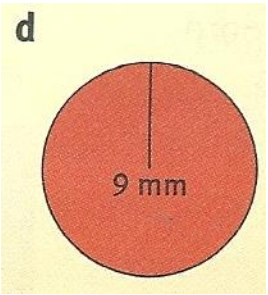
= _____

c



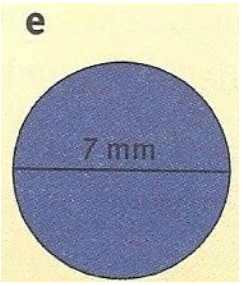
Opp. = _____
=_____
= _____

d



Opp. = _____
= _____
= _____

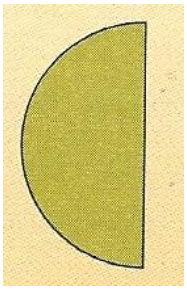
e



r = _____
Opp. = _____
= _____
= _____

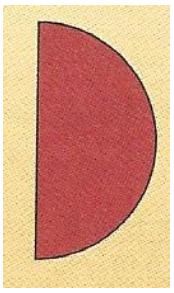
4. Bereken die opervlakte en die omtrek van die volgende halfsirkels:

a) straal 10 cm



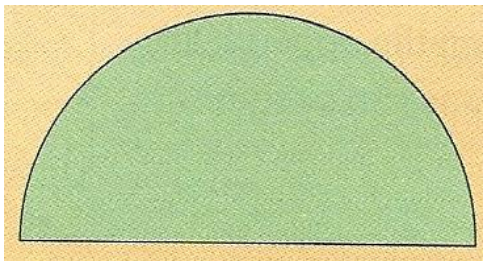
A = _____
= _____
= _____
Omtrek = _____
= _____
= _____
= _____
= _____
_____

b) deursnee 27 cm



r = _____
_____
_____
= _____
_____
Omtrek = _____
= _____
= _____
= _____

c) omtrek van hele sirkel 50 cm



r =_____

r =_____

=_____

Opp. =_____

=_____

=_____

Omtrek =_____

=_____

=_____

=_____

Memo:

Oppervlakte en omtrek van 2D-vorms:

Oppervlakte en omtrek:

1. Watter van hierdie bewerings oor die oppervlakte van 'n vorm is waar?

a) Oppervlakte = l x *b*.

Waar. Oppervlakte = l x *b*.

Dit is 'n voorbeeld van 'n formule wat ons kan gebruik om oppervlakte te bereken.

Hierdie spesifieke formule is slegs vir reghoeke waar.

Elke vorm het sy eie spesifieke formule.

b) Oppervlakte is die hoeveelheid buite-oppervlak in ‘n vorm.

Waar.

c) Oppervlakte is die aantal vierkante wat 'n oppervlak bedek.

Waar.

Dit is hoe 'n oppervlakte gemeet word: deur vierkante sentimeter (cm2), vierkante meter (m2) of vierkante kilometer (km2) te gebruik.

2. Watter van hierdie bewerings oor die omtrek van 'n vorm is waar?

a) Omtrek = 2l +2*b* of 2(l x *b*)

Waar. Omtrek = 2l +2*b* of 2(l x *b*)

Dit is 'n voorbeeld van 'n formule wat ons kan gebruik om omtrek te bereken.

Hierdie formule is slegs vir reghoeke waar.

Elke vorm het sy eie formule.

b) Omtrek is die afstand om die rand van 'n vorm.

Waar.

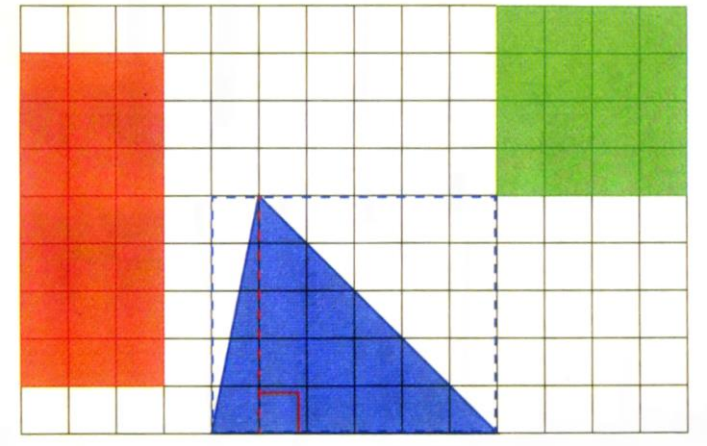
c) Omtrek is die lengte van die sye of rande bymekaar getel.

Waar.

Dit is hoe omtrek gemeet word: deur sentimeter (cm), meter (m) of kilometer (km) te gebruik.

Vierkante, reghoeke en driehoeke:

1. Bereken die oppervlakte en die omtrek van die volgende vorms, die lengtes van die skuinssye van die driehoek is 5,1 cm en 7,1 cm:



Oppervlakte

Reghoek

A = l x *b* = 7 x 3

= 21 vierkante

Driehoek

Opp. = $\frac{1}{2}(b \times h)$

$\frac{1}{2}(6 \times 5)$

$\frac{1}{2}30$

15 vierkante

Vierkant

Opp. = l^2

4^2

30 vierkante

Omtrek

Reghoek

Omtrek v regh. = 2l + 2*b*

= 2(7) + 2(3)

= 14 + 6

= 20 vierkante

Driehoek

Omtrek v. driehoek = s + s + s

= 6 + 5,1 + 7,1

=18,2 vierkante

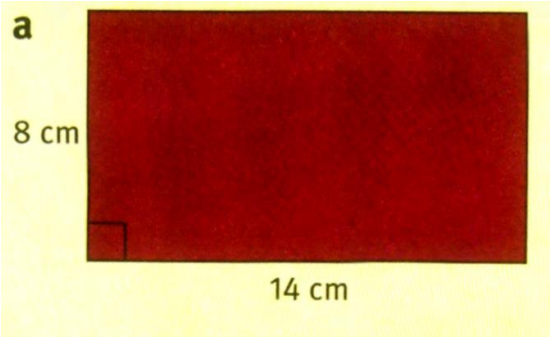
Vierkant

Omtrek v. vierkant = s + s + s + s

= 4 + 4 + 4 + 4

= 16 vierkante

2. Gebruik die formules om die oppervlakte en omtrek van die volgende te bereken:



Omtrek v. regh. = 2l + 2*b*

= 2(14)+ 2(8)

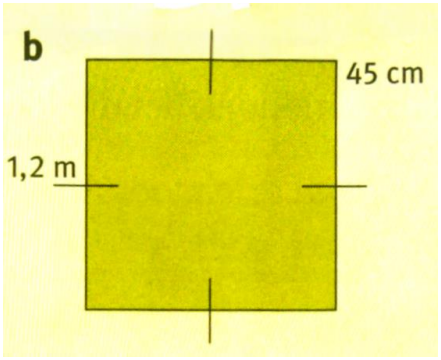
= 28 + 16

= 44 cm

Opp. v. regh. = l x l

= 14 x 8

= 11,2 cm^2



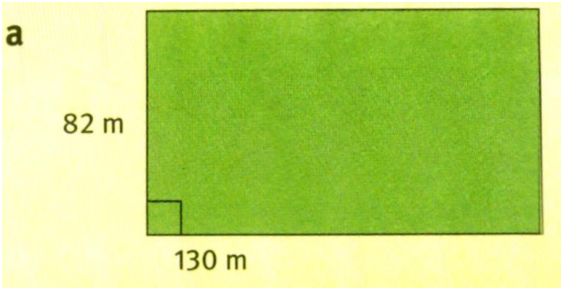
Omtrek v. vierkant = 4l
= 4 x 1,2
= 4,8 m

Opp. v. vierkant = l^2
= $(1,2)^2$
= 1,44 m^2

Omtrek v. regh. = 2l + 2*b*
=2(2,5) + 2(0,45)
= 5 + 0,9
= 5,9 m

Opp. v. regh. = l x *b*
= 2,5 x 0,45
= 1,125 m^2

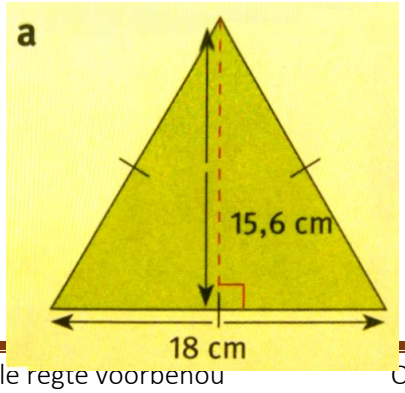
3. Bereken die oppervlakte en omtrek van die volgende:



Opp. v. regh. = l x *b*
= 130 x 82
= 10 660 m^2

Omtrek v. regh. = 2(l x *b*)
= 2 (130 + 82)
= 2 (212)
= 424 m

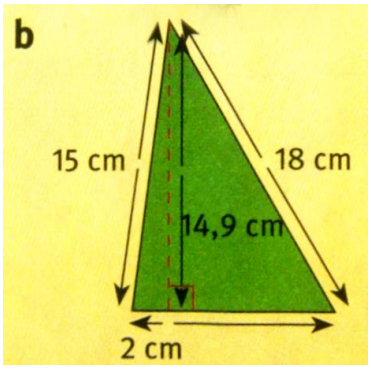
4. Bereken die oppervlaktes en omtrekke. Deel hierdie vorms in vierkante, reghoeke en driehoeke op ten einde die oppervlakte te bereken:



Omtrek v. driehoek = 3 x s
= 3 x 18
= 54 cm

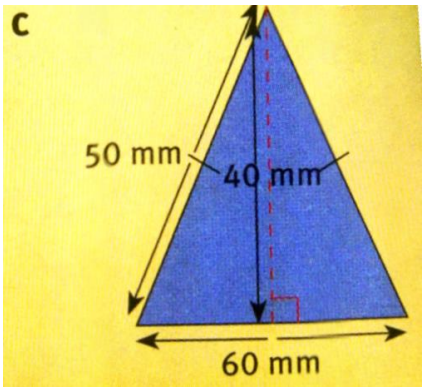
Opp. v. driehoek = $\frac{1}{2}$ (*b* x *h*)
= $\frac{1}{2}$ (18 x 15,6)

= 14,04 m²



Omtrek v. driehoek = s + s + s
= 15 + 12 + 18
= 45 cm

Opp. v. driehoek = $\frac{1}{2}$ (*b* x *h*)
= $\frac{1}{2}$ (12 x 14,9)
= 6 x 14,9
= 89,4 cm²



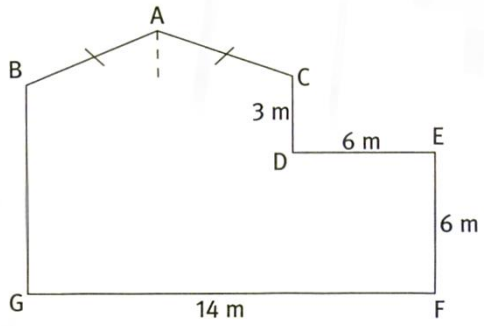
Omtrek v. driehoek = s + s + s
= 50 + 50 + 60
= 160 mm

Opp. v. driehoek = $\frac{1}{2}$ (*b* x *h*)
= $\frac{1}{2}$ (60 x 40)
= $\frac{1}{2}$2400
= 1200 mm²

Veelhoeke:

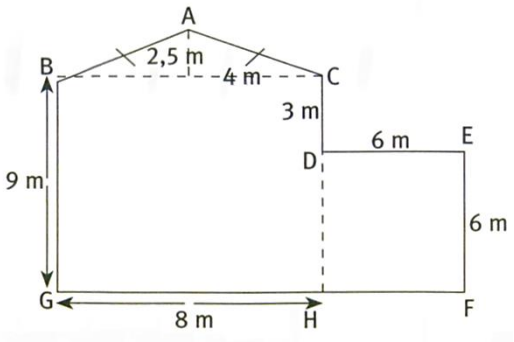
1. Voltooi die volgende:

Om die oppervlakte van die vorm te bereken, moet ons:
Die komplekse vorm in drie verskillende vorms opdeel:
'n driehoek, 'n reghoek en 'n vierkant.



2. Bereken die ontbrekende mates:

BG = 6 + 3 = 9m
GH = 14 — 6 = 8 m



3. Bereken die oppervlakte van driehoek ABC:

Oppervlakte = $\frac{1}{2}$ (*b* x *ht*)
= $\frac{1}{2}$ (8 x 2,5) m²
= $\frac{1}{2}$ x 20 m²
= 10 m²

4. Bereken die oppervlakte van reghoek BCHG:

Oppervlakte = l x *b*

= 8 x 9 m²

= 72 m²

5. Bereken die oppervlakte van vierkant DEFH:

Oppervlakte = s²

= 6²

= 36 m²

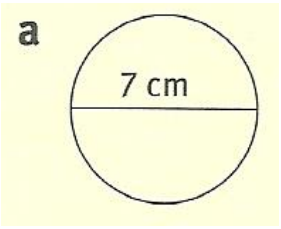
Totale oppervlakte = 10 + 72 + 36 = 118 m²

Sirkels:

1. Gebruik die deursnitte om die omtrek vir elk van die sirkels hieronder te bereken.

Gebruik 3,14 as die waarde van π:

a

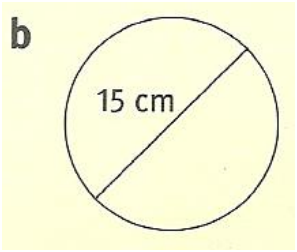


C (*omtrek*) = π *D*

= 3,14 x 7

= 21,98 cm

b

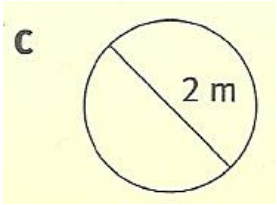


C = π *D*

= 3,14 x 15

= 47,1 cm

c

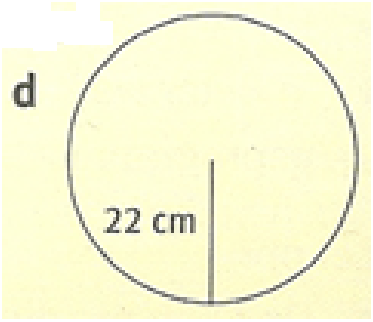


C = π *D*

= 3,14 x 2

= 6,28 m

d



C = π *D*

3,l4 x 22

= 69,12 cm

2.Bereken die omtrek van sirkelvormige houers wat die volgende deursnitte het:

a) 50 mm

Omtrek = π *D*

= π x 5

= 15,7 mm

b) 23 cm

Omtrek = π *D*

= π x 23

= 72,26 cm

c) 0,325 m

Omtrek = π *D*

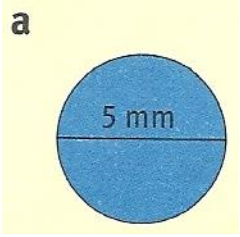
= π x 0,325 m

= 10,177 m

3. Gebruik die deursnitte om die opervlakte vir elk van die volgende sirkels te bereken.

Gebruik 3,14 as die waarde van π:

a



r = 5 ÷ 2

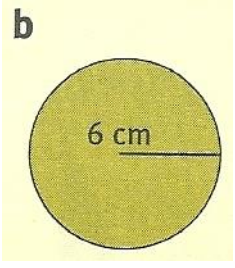
= 2,5

Opp. = π*r*²

= π x (2,5)²

= 19,63

b

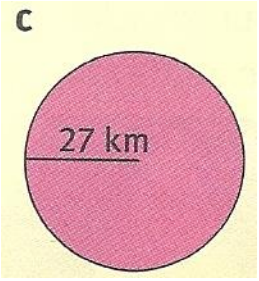


Opp. = π*r*²

= π x (6)²

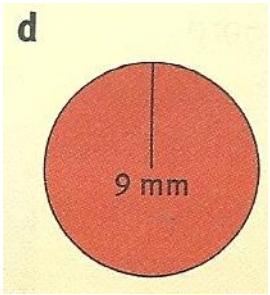
= 113,0 cm

c



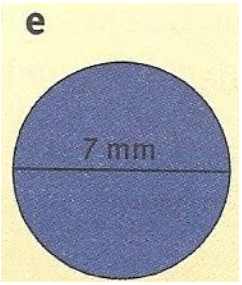
Opp. = πr^2
= $\pi (27)^2$
= 2289,06 km²

d



Opp. = πr^2
= π x $(9)^2$
= 254,34 mm²

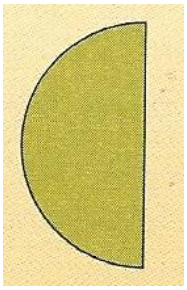
e



r = 7 ÷ 2 = 3,5 cm
Opp. = πr^2
= π x $(3,5)^2$
= 38,47 mm²

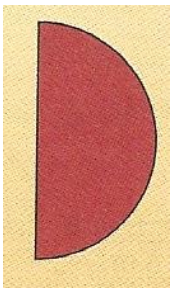
4. Bereken die opervlakte en die omtrek van die volgende halfsirkels:

a) straal 10 cm



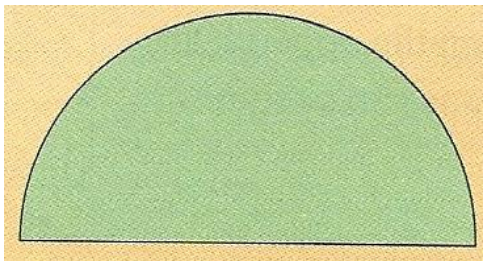
$A = \pi r^2$
= π x $(10)^2$
= 314 cm²
Omtrek = $D + \frac{1}{2}(c)$
= 9 $(2r) + \frac{1}{2}(\pi D)$
= (2 x 10) + $\frac{1}{2}$ (π x 2 x 10)
= 20 + $\frac{1}{2}$ (62,83)
= 20 + 31,42
51,42 cm

b) deursnee 27 cm



r = 27 ÷ 2
13,5 cm
$A = \pi r^2$
= π x $(13,5)^2$
572,56 cm²
Omtrek = $D + (\pi D)$
= 27 + (π x 27)
= 27 + 84,82
= 111,82 cm

c) omtrek van hele sirkel 50 cm



$r = \frac{c}{2\pi}$ ($D = \frac{c}{\pi}$ $\therefore r = \frac{c}{2\pi}$)

$r = \frac{50}{2x\pi}$

= 7,96

Opp. = $\pi(r)^2$

= π x $(7,96)^2$

= <u>198,96 cm²</u>

Omtrek = $D - \frac{1}{2c}$

= $\frac{50}{\pi} + \frac{1}{2}(50)$

= 15,92 25

= <u>40,92 cm</u>