27/07/2018

$-5x^2+9+7x=0$

$x=\frac{-(7)\pm\sqrt{(7)^2-4(-5.9)}}{2.(-5)}$

$x=\frac{-7\pm\sqrt{49-4(-45)}}{-10}$

$x=\frac{-7\pm\sqrt{49+180}}{-10}$

$x=\frac{-7\pm\sqrt{229}}{-10}$

$x\cong 7\pm -1,5$

$6-6x^2=3x$

$-3x+6-6x^2=0$

$x=\frac{-(-3)\pm\sqrt{(3)^2-4(-6.6)}}{2.(-6)}$

$x=\frac{3\pm\sqrt{9+144}}{-12}$

$x=\frac{3\pm\sqrt{153}}{-12}$

$x=\frac{3\pm 3\sqrt{17}}{-12}$

$x=\frac{1\pm\sqrt{17}}{-4}$

153 | 3
51 | 3
$\sqrt{17}$

INVERSE TRIG ARCCOS $0\le \theta \le\pi$ SUCH THAT $\cos(\theta)=x$

$0°\le \arccos(\theta)\le 180°$

$-\frac{\pi}{2}\le \arcsin(\theta)\le\frac{\pi}{2}$

$-90\le \arcsin(\theta)\le 90°$

$-\frac{\pi}{2}\le \arctan(\theta)\le\frac{\pi}{2}$

$-90°\le \arctan(\theta)\le 90°$

$\cos(x)=-0,35$

~~$\cos(111)=-0,3583$~~

$\frac{1 \text{ rad}=180}{\pi}=57,29$

~~$\frac{111}{57,29}=1,9375109$~~

$\cos(\theta)=\cos(-\theta)$

$\cos(\theta)=\cos(\theta+2\pi)$

$\cos(,035)=\frac{110,487315}{180/\pi}=1,92836743$

$x=1,93+n.2\pi$

$x=-1,93+n.2\pi$

$x=1,93+n.2\pi$

N	1,93+n.2π	N	-1,93+n.2π
0	1,93	0	-1,93
1	8,2131 --- ✓	1	4,3531 --- ✓
2	14,4965	2	10,06 --- ✓
3		3	~~16,1195~~

$\sin(x)=0,4$

$\sin^{-1}(0,4)=\frac{23,578185}{180/\pi}=0,0416$ (~~235,78185~~) (~~0,4115168~~)

$\sin\theta=\sin(180-\theta)$ ~~0,041695+n.~~ / π

~~$x=0,411$~~

180-23,58=
156,42

~~$x=235,78+n.360°$~~

~~$x=0$~~

$\sin(\theta)=\sin(\theta+360)$

$x=23,58+n.360$

$x=156,42+n.360$

$\cos(x)=1$

$\cos^{-1}(1)=\phi$

FROM 270° to 810° = 540° = 6.90°
or 3×180

$x=0°+360.n$

$x=0°+360.1=1$

$x=0°+360.1=1$

2020/8/05

27/07/2018

Bidículo ≠ Tridículo
(cf. Bidículo)

$P \neq \neg P$ $P = \neg P$ P É CONTRADOMÍNIO DE ¬P

$P \vee \neg P$ P OU ¬P P OU NÃO-P

A PROPOSIÇÃO É TOMADA COMO P OU ¬P DE ACORDO COM AS INFERÊNCIAS LÓGICAS QUE A SUSTENTAM.

"THE UNIVERSITY PEOPLE ARE INCREDIBLE!": NOT THAT MUCH BUT THEY INDEED ARE

FOR ALL x IN G, SOME OF G PROPERTIES COULD BE OR NOT INHERITED BY BOTH x AND G.

UNIVERSITY PROFESSORS & STUDENTS ARE IN GENERAL MORE OPEN TO DEBATES AND ALSO USED TO LOGIC.

MAX'S AND MIN'S ARE AN USEFUL TOOL TO APPROXIMATE RESULTS OF GIVEN AIMED BY FOR LOGIC OR SEMANTIC PROBLEMS.

WHEN ONE ASSUME A POSITION, THERE IS ALSO THE OPPOSITE, THE MIDDLE, & THE OUTER.

O IMPEDIMENTO É FALHO, DADO QUE O TEMPO É A CORRUPTIBILIDADE! TODA ESTRUTURA DEVE RUIR. $\nexists x \pm \frac{x}{x} - 1$

$\sin(x) = -0,25$

$\sin^{-1}(-0,25) = \frac{-1,4477512 \times 10^{1}}{180/\pi} = -0,023601862 5$

$\sin(\theta) = \sin(\theta + 2\pi)$

$x = -0,0256 + N \cdot 2\pi$

$x = 0,0256 + N \cdot 2\pi$

$-\pi < x < \pi$

N	x
0	-0,0256
1	-0,16
1,5	-0,291
2	-0,32
3	-0,48
4	-0,64

1,559

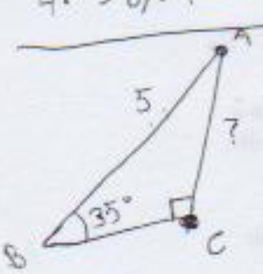
TIG LEVIEW

$\frac{180}{\pi}$

$\sin(\theta) =$

$\cos(\theta) =$

$\tan(\theta) =$



$AC = 2,867 V$

$\sin(35°) = \frac{OP}{HYP}$ $HYP = \frac{OP}{\sin(35°)}$

$OP = \frac{\sin(35°)}{5}$

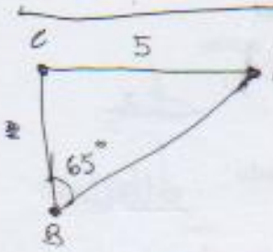
$HYP(\sin(35)) = OP$

$OP = 0,1147$

$HYP = 2,867$

$TOA = \tan(35) = 2,867$

$SOH = \frac{OP}{HYP} = \sin(35) = \frac{2,86}{5}$ V



$BA = 5,51$

$\tan(65°) = \frac{OP}{ADJ}$

$ADJ = \frac{5}{\tan(65°)}$

$ADJ = 2,33153829 = CB$

$\sin(65) = \frac{5}{HYP}$ V

$HYP = \frac{5}{\sin(65)}$

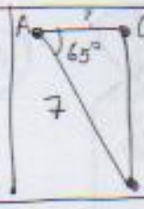
$HYP = 5,51688959$

$BC = 1,400$

$\tan(35) = \frac{OP}{2}$ V

$OP = 2 \tan(35)$

$OP = 1,400 41508$



$AC =$

$\cos(65) = \frac{ADJ}{7}$ V

$ADJ = 7\cos(65)$

$ADJ = 2,958332783$

O PENSAMENTO MAIS INTRIGANTE, E RECORRENTE, É O VEREDITO FINAL, NO QUAL TODA E QUALQUER PROPOSIÇÃO (VARIÁVEL, GRUPO, CONSTANTE, OU INFERÊNCIA) É DENOMINADA VARIÁVEL, DERIVADA DE PROPOSIÇÕES, GRUPO, DERIVADA DE VARIÁVEIS etc. QUALQUER EXISTÊNCIA EMERGE ASSIM. A INTERAÇÃO AGRUPA E DERIVA.

2020/10/05

27/07/2018

QUADRÁTICA FORMULA

$ax^2+bx+c=0$

$$x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}$$

Ex.:

FOR $x^2+4x-21=0$

$x^2=1,\ b=4,\ c=-21$

$$x=\frac{-(4)\pm\sqrt{(4)^2-4(1\cdot-21)}}{2\cdot1}$$

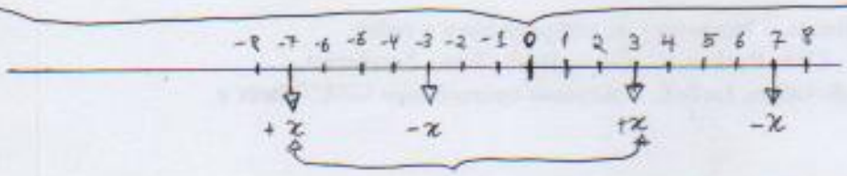
$$x=\frac{-4\pm\sqrt{16-(-84)}}{2}$$

$$x=\frac{-4\pm\sqrt{100}}{2}$$

$$x=\frac{-4\pm10}{2}$$

$$x=-2\pm5$$

$$x=\begin{cases}\frac{-4-\sqrt{100}}{2}=\frac{-4-10}{2}=-7\\ \frac{-4+\sqrt{100}}{2}=\frac{-4+10}{2}=3\end{cases}$$



FOR $x^2+4x-21=0$, $x=-7$ OR $x=3$

$L\ (-7)^2+4(-7)-21=0$

$(49)+(-28)-21=0$

$(21)-21=0$

$L\ (3)^2+4(+3)-21=0$

$9+(+12)-21=0$

$21-21=0$

$-5x^2+7x=-9$

$-5x^2+7x+9=0$

$$x=\frac{-(7)\pm\sqrt{(7)^2-4(-5\cdot9)}}{2\cdot(-5)}$$

$$x=\frac{-7\pm\sqrt{49+180}}{-10}$$

$$x=\frac{-7\pm\sqrt{229}}{-10}=\frac{-7\pm15,327460}{-10}$$

$x=0,7\pm-1,5$

$6+2x^2-3x=8x^2$

$6+2x^2-8x^2-3x=0$

$6-6x^2-3x=0$

$-6x^2-3x+6=0$

$$x=\frac{-(-3)\pm\sqrt{(-3)^2-4(-6\cdot6)}}{2\cdot-6}$$

$$x=\frac{3\pm\sqrt{9-4(-36)}}{-12}$$

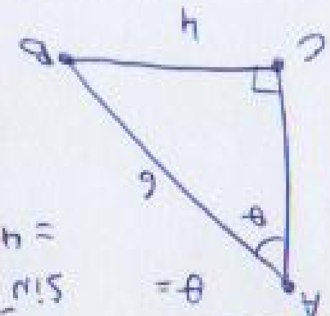
$$x=\frac{3\pm\sqrt{9+144}}{-12}=\frac{3\pm\sqrt{153}}{-12}$$

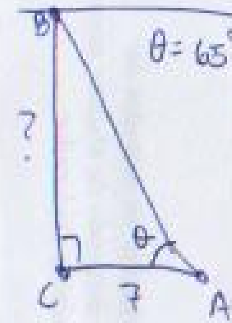
$x=-0,25\pm-1,03077641$

$$x=\frac{3\pm\sqrt{153}}{-12}=\frac{3\pm3\sqrt{17}}{-12}=\frac{1\pm\sqrt{17}}{-4}$$

2018/05

24/07/2018





$\frac{14}{8} - 4 - 2h \quad g = 1 \; h = 4$

$14 - 4 - 8 = 2$ ✓

$7 - 5p + 3q \quad p = 1 \quad q = 7$

$7 - 5 + 21 = 23$ ✓

15

$\theta = 65^\circ \quad BC = 15$

$\cos(65) = \frac{7}{Hyp}$

$Hyp = \frac{7}{\cos(65)}$

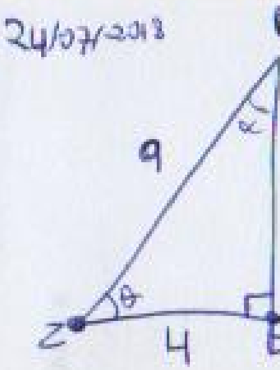
$Hyp = 1{,}6563 \times 10^{1}$

$Hyp = 16{,}56$

$16{,}56^2 = 7^2 + c^2$

$c^2 = 16{,}56^2 - 7^2$

$c = 15$ ✓



$9^2 = 4^2 + c^2$

$c^2 = 9^2 - (4^2)$

$c^2 = 81 - 16$

$c^2 = 63$

$c = \sqrt{63}$

$c = 8{,}062$

$OE = 8{,}062$

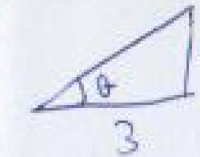
$M\angle O = \sin^{-1}\left(\frac{op}{hyp}\right)$

$M\angle O = \sin^{-1}\left(\frac{4}{9}\right)$

$M\angle O = 26{,}3878^\circ$

$M\angle Z = \cos^{-1}\left(\frac{ADJ}{HYP}\right) = \cos^{-1}\left(\frac{4}{9}\right)$

$M\angle Z = 6{,}36122 \times 10 = 63{,}61$ ✓



SOH
CAH
TOA

$\cos\theta = \frac{3}{5} = 0{,}6$

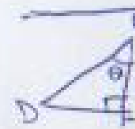
$H^2 = 3^2 + 4^2$

$H = 5$

~~$\cos\theta$~~

$\sin\theta = \frac{4}{5} = 0{,}8$ ✓

$\tan\theta = \frac{4}{3} = 1{,}333$



$\theta = 55^\circ$

$\cos(55) = \frac{4}{HYP}$

$HYP = \frac{4}{\cos(55)}$

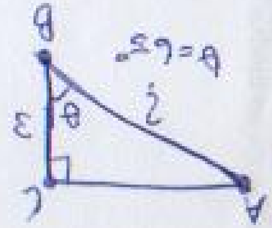
$HYP = 6{,}97$ ✓

12

$\theta = \sin^{-1}(4 \div 6)$

$= 41{,}8103149$

16



$\theta = 65^\circ$

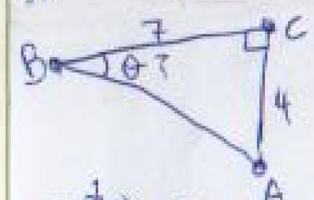
$Hyp = \frac{3}{\cos(65^\circ)}$

$\cos(65^\circ) = \frac{3}{Hyp}$

$Hyp = 7{,}0996$

$AB = 7{,}0996$

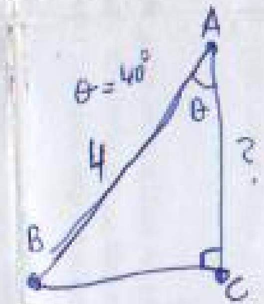
13



$BA = 8{,}062$

$\tan^{-1}(\theta) = \frac{4}{7}$

$\tan^{-1}\left(\frac{4}{7}\right) = 29{,}7448813$



$\theta = 40^\circ$

$AC = ? = 3{,}0641$ 12

$\cos(40^\circ) = \frac{ADJ}{HYP} = \frac{ADJ}{4}$

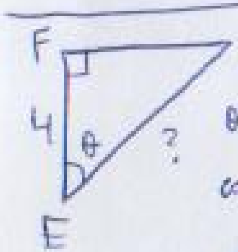
$4\cos(40^\circ) = ADJ$

$ADJ = 3{,}0641$

$\tan(40) = \frac{op}{3{,}0641}$

~~op~~ $3{,}0641(\tan(40^\circ))$

$op = 2{,}5711$ ✓



$DE = 6{,}97$

$FD = 5{,}7097$

$\theta = 55^\circ$

$\cos(55^\circ) = \frac{4}{HYP}$

$Hyp = \frac{4}{\cos(55)}$

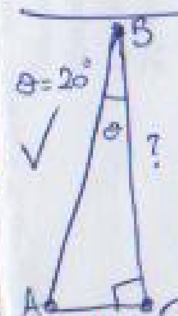
$Hyp = 6{,}97$

$c^2 = H^2 - c^2$

$c^2 = 6{,}97^2 - 4^2$

$c^2 = 3{,}45$

$c = 5{,}7097$



$\theta = 20^\circ$

$BC = 10{,}989$

~~$\tan(20) = \frac{4}{ADJ}$~~

~~$ADJ = 4\tan(20)$~~

~~ADJ =~~

$\sin(20) = \frac{4}{HYP}$

$HYP = \frac{4}{\sin(20^\circ)} = 11{,}69$

$\sin(20) = \frac{4}{H}$

$\tan(20) = \frac{4}{A}$

$A = \frac{4}{\tan(20)}$

$A = 10{,}989$

25/07/2018 14

$jk - 4k - 7 \quad j = 8 \quad k = 3$

$24 - 12 - 7 = 5$ ✓

$5c - 3d + 11 \quad c = 7 \quad d = 8$

$35 - 24 + 11 = 22$ ✓

$6 + \frac{4}{a} + \frac{b}{3} \quad a = 4 \quad b = 3$

$6 + 1 + 1 = 8$ ✓

$\frac{a}{b} + \frac{3h}{4} + 5 \quad a = 3 \quad h = 6$

$\frac{3}{a} + \frac{12}{4} + 5 = 3 + 12 + 5 = 20$

$2 + \frac{h}{p} \quad p = 8 \quad q = 6$

✓

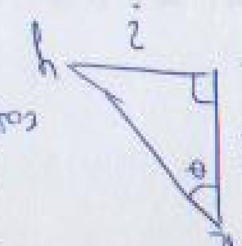
$Ty = \quad \theta = 37^\circ$

$\cos(37) = \frac{ADJ}{HYP} = \frac{3}{HYP}$

$Hyp = \frac{3}{\cos(37)}$

$Hyp = 3{,}76$

$Ry = 2{,}76$



$c = 5{,}11$

$c^2 = 3^2 + c^2$

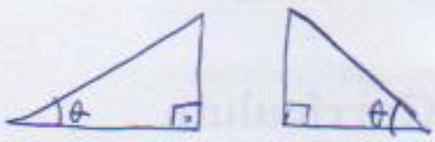
$H^2 = c^2 + c^2$ ✓

23/07/2018

$\sin(\theta) = \frac{\text{opposite}}{\text{Hypotenuse}}$

$\cos(\theta) = \frac{\text{adjacent}}{\text{Hypotenuse}}$

$\tan(\theta) = \frac{\text{opposite}}{\text{adjacent}}$



$\sin^{-1}\left(\frac{\text{opposite}}{\text{Hypotenuse}}\right) = \theta$

$\cos^{-1}\left(\frac{\text{adjacent}}{\text{Hypotenuse}}\right) = \theta$

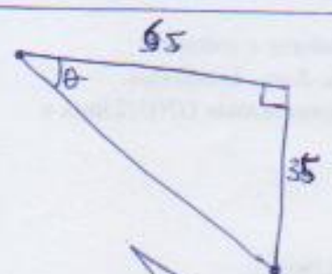
$\tan^{-1}\left(\frac{\text{opposite}}{\text{adjacent}}\right) = \theta$

$\sin^{-1}(x) \neq \frac{1}{\sin(x)}$

FOR $F^{-1}(x) \neq \frac{1}{F(x)}$ OR $\frac{1}{F}(x) \neq F^{-1}(x)$

$F^{-1}(x)$ IS THE INVERSE OF $F(x)$

- Ex.:

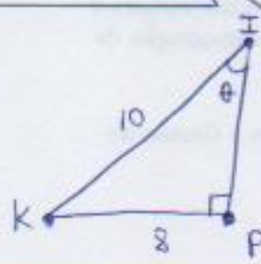


$m\angle L = \tan^{-1}\left(\frac{\text{OPP}}{\text{ADJ}}\right)$ } DEFINE

$m\angle L = \tan^{-1}\left(\frac{35}{65}\right)$ } PLUG IN

$m\angle \tilde{=} 28.30°$

Ex2..:

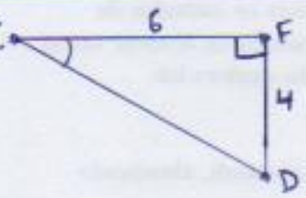


~~$m\angle I = \tan^{-1}\left(\frac{\text{OPP}}{\text{ADJ}}\right)$~~

$m\angle I = \sin^{-1}\left(\frac{8}{10}\right)$

$m\angle I \approx 53,13°$

Ex3.:

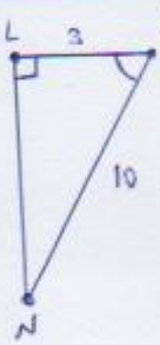


$m\angle E = \tan^{-1}\left(\frac{\text{OPP}}{\text{ADJ}}\right)$

$m\angle E = \tan^{-1}\left(\frac{4}{6}\right)$

$m\angle E \approx 33,69°$

Ex4..:



$m\angle Y = \cos^{-1}\left(\frac{\text{ADJ}}{\text{HYP}}\right)$

$m\angle Y = \cos^{-1}\left(\frac{3}{10}\right)$

$m\angle Y = 7,2542396 9 \times 10^{1}$

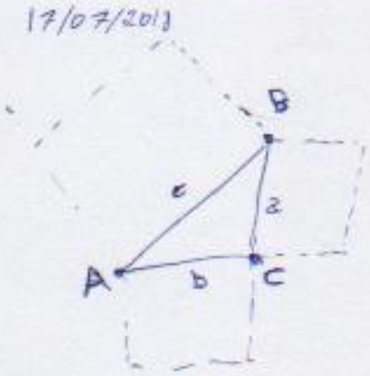
$m\angle Y = 72,54°$

16/07/2018

- DERMATOLOGISTA
  L
- DENTISTA ✓
  L 23/07/14:45
  23/07/2018 12:00 PRAÇA ZACARIAS, Nº 80
  3085-7550 EDIFÍCIO JOÃO ALFREDO
  DR. MARIANA MARÇAL CONJUNTO 201
- UROLOGIA
  L
- DR. ERNESTO 15:30 24/07/2018

23/07/2018 12:31

17/07/2018



$$\frac{\text{SEN}\hat{A}}{a} = \frac{\text{SEN}\hat{B}}{b} = \frac{\text{SEN}\hat{C}}{c}$$

LEI DOS SENOS

$a^2 = b^2 + c^2 - 2bc\cos\hat{A}$

$b^2 = a^2 + c^2 - 2ac\cos\hat{B}$

$c^2 = a^2 + b^2 - 2ab\cos\hat{C}$

19/07/2018

$a^2 = 32$ $\quad 32 = 16 + 16$

$b^2 = 16$ $\quad (5.65685425)^2 = 4^2 + 4^2$

$c^2 = 16$ $\quad ((5)(5.65685425 + (1 \times 10^{0}))^2 = 16 + 16$

$((5) + (5.65685425 \div (2 \times 10^{0})))^2 = (5 + 5.65685425 \times 10^{-1})^2$ $\quad a^2 = b^2 + c^2$ $\quad \sqrt{a^2} = \sqrt{b^2 + c^2}$

$((5) + (5.65685425 \times 10^{-1}))^2 = (5 + 5.65685425 \times 10^{-1})^2$

$(5 + 5.65685425 \times 10^{-1})^2 = 32$

$(5 + 5.65685425 \times 10^{-1})^2 = 16 + 16$

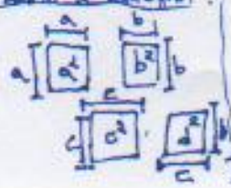
$(5 + 5.65685425 \times 10^{-1})^2 = 4^2 + 4^2$

$(5 + A)^2 = 4^2 + 4^2$

$(b + A)^2 = b^2 + c^2$

ONDE $(b+A)^2$ PODE SER LIDO COMO

$\left(\frac{a}{x}\right)^2$ OU $(a - x + x)^2$ ALÉM DE ANÁLOGOS.



$a \cdot a = a^2$ $\quad a = \sqrt{a \cdot a}$

$b \cdot b = b^2$ $\quad b = \sqrt{b \cdot b}$

$c \cdot c = c^2$ $\quad c = \sqrt{c \cdot c}$

$5 \cdot b = d^2$ $\quad d = \sqrt{c \cdot b}$

$a = 5.65685425$ $\quad A = 5.65685425 \times 10^{-1}$

$b = 4$ $\quad B = 5$

$c = 4$ $\quad a = (A + B)$

$d = 4$

ENTÃO EM DADO PONTO DE a, obtém-se UM ÂNGULO DE 90°

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

19/07/2018

$E = \text{pattern}(L^{-1}, U)$

VL $\begin{cases} L = \text{LOCAL(DIRECTIONS} \\ U = \text{RELATIONS} \end{cases}$

$\frac{20}{4} = 5 \quad -4 = 1$ $\quad E = p(L)H(U)$

$\frac{a}{b} = c \quad c - b = 1$

$2(c) = d \quad b(c) = 2$

$E = \text{pattern}(G)$ VL OUE

$G = \text{Group}(LN)$

dye molecular weight = $\frac{200}{6.0225\times10^{-23}} = 3{,}32088003\times10^{-22}$ g/atom } y

$\frac{360g}{3{,}32088003\times10^{-22}} = 1{,}08405\times10^{24} \times (2g/10^{25}g) =$ x

$\frac{360g}{3{,}22088003\times10^{-22}} = 1{,}11770686\times10^{24}$ atoms

~~360g (360g / 3,32088003 x 10^-22)~~

$\frac{2g/(3{,}22083303\times10^{-22})}{10^{25}g/(1{,}66044002\times10^{-23})} = 1{,}03102385\times10^{-26}$ x

molecules of dye in 360g of ocean

$\left(\frac{2g}{3{,}32088003\times10^{-22}g}\right) \div \left(\frac{10^{25}g}{2{,}82397177\times10^{-23}g}\right) = 1{,}70073700\times10^{-26}$ dye/H_2O

(atoms in 2g of dye) ÷ (atoms in the ocean)

$\frac{360g}{2{,}82397177\times10^{-23}} = 1{,}27480028\times10^{25}$ atoms

H_2O mass / H_2O atomic weight

$\frac{m}{H_2O} \times$ (dye per H_2O)

$\frac{1{,}27480028\times10^{25}}{1{,}70073700\times10^{-26}}$ } F } x

$F \times x = 2{,}16810000\times10^{-1}$

~~dye in 360g of ocean, if 2g of dye was uniformly distributed in 10^{25} g of H_2O.~~

$\frac{m}{H_2O} \times \frac{m}{\text{dye per } H_2O} = 3{,}60000000\times10^{2}$ ~~hence there is less~~

$\frac{\text{Dye\_mass}}{\text{Dye\_atomic\_weight}} = \frac{2g}{3{,}22088003\times10^{-23}} = 6{,}20948254\times10^{24}$ atoms

$\frac{\text{Dye\_Atoms}}{\text{Ocean\_Atoms}} = \frac{6{,}20948254\times10^{24}}{3{,}54111189\times10^{47}} = 1{,}75354034\times10^{-26}$ dye atom / ocean atom

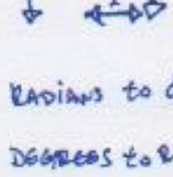
~~$\frac{\text{Ocean\_mass}}{\text{Ocean\_atomic\_weight}} \times \frac{\text{Ocean\_mass}}{(\text{Dye\_atom}/\text{Ocean\_atom})} =$~~

$\text{Ocean\_Atoms} = \frac{\text{Ocean\_mass}}{\text{Ocean\_atoms}} \times \frac{\text{Dye\_atom}}{\text{Ocean\_atom}} = 2{,}23541371\times10^{-1}$ atom of dye $= 0{,}224 = \frac{1}{5}$

chance of dye atom

06/07/2018

1 RADIAN ≈ 57,2958... DEGREES:



π RADIANS = 180°

1 RADIAN = 180°/π ≈ 57,2958°

RADIANS to DEGREES: MULTIPLY by 180°, DIVIDE by π

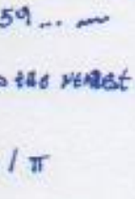
DEGREES to RADIANS: MULTIPLY by π, DIVIDE by 180°

DEGREES	RADIANS (exact)	RADIANS (APRX.)
30°	π/6	0,524
45°	π/4	0,785
60°	π/3	1,047
90°	π/2	1,571
180°	π	3,142
270°	3π/2	4,712
360°	2π	6,283

x (RADIANS)	1	0,1	0,01	0,001
SIN(x)	0,84147210	0,09983334	0,00999998	0,00099999998

↳ FOR VERY SMALL VALUES, "x" AND "SIN(x)" ARE ALMOST THE SAME

DEFINITION OF π: $\frac{\text{CIRCUMFERENCE}}{\text{DIAMETER}} = \pi = 3,14159...$



EX.: CIRCUMFERENCE MEASURE = 82 cm
DIAMETER MEASURE = 26 cm
$\frac{82\text{ cm}}{26\text{ cm}} = 3,143846154...$

↳ PRECISION PROBLEMS

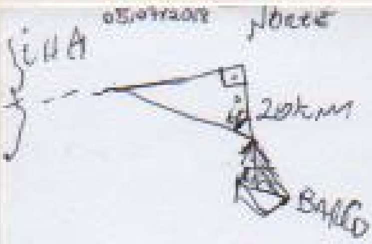
USING π: DIAMETER = 100 mm

CIRCUMFERENCE = π × DIAMETER
- CIRCUMFERENCE = π × 100 mm
- = 314,159... mm
- = 314 mm (to the nearest mm)

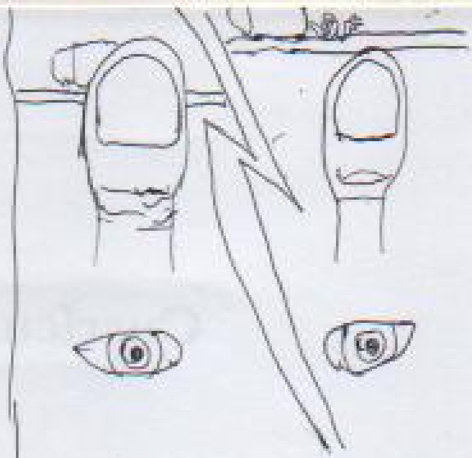
DIAMETER = CIRCUMFERENCE × π
- = 94 mm / π
- = 29,92... mm
- = 30 mm (to the nearest mm)

RADIUS:

FOR A CIRCLE WITH A RADIUS 1, THE DISTANCE HALFWAY AROUND THE CIRCLE IS π = 3,14159265...



$H^2 = c^2 + (20\,km)^2$



PARALAXE

PARALAX

- O RAIO DA TERRA É O CATETO OPOSTO A P
- AL OU BL É A DISTÂNCIA (D) DO OBSERVADOR ATÉ A LUA.
- CD = AC É O RAIO DA TERRA
- CL É A D DO CENTRO DA TERRA ATÉ A LUA.

LEMBRANDO QUE

$SEN\ p = \frac{\text{CATETO OPOSTO A P}}{\text{HIPOTENUSA}}$

TEREMOS

$SEN\ p = \frac{AC}{CL}$

$= \frac{R\ TERRA}{D\ CENTRO(t)\ a\ C(L)}$

$D\_CENTRO\_TERRA = \frac{R\_TERRA}{SEN\ p}$

$D\hat{O}H = 90°$

$\alpha: 0{,}85°$

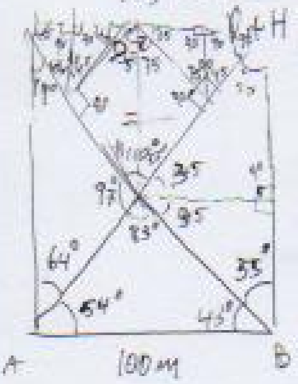
$H = 70\,km$

R TERRA

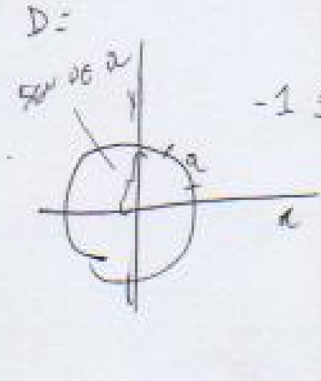
$\cos\alpha = \frac{CA}{h}$

$\cos\alpha = \frac{D}{D+h}$

$\cos\alpha = \frac{R}{R+H} = 0{,}3 = \frac{R}{R + 70\,km}$



D =



$-1 \leq sen\,\theta \leq 1$

$sen\,\theta = 90°$

05/07/2018

2-B1 VOLUME = $50 m^3$ SPECIFIC GRAVITY/AIR = 0.14

HELIUM ~~0,1785 × 10^{-3} g/cm³~~ DENSITY = MASS / VOLUME

AIR ~~1,293 × 10^{-3} g/cm³~~

$50 m^3$ = VOLUME = MASS / DENSITY

MASS = VOLUME × DENSITY

D HELIUM / D AIR

= 1,38051044 × 10^{-1}

$m = 50 m^3 \times 0{,}1785 \times 10^{-3}$ g/cm³

~~m = 8,92500000 × 10^{-3} g~~

$m = 50000 cm^3 \times 0{,}1785 \times 10^{-3}$ g/cm³

m = 8,92500000 g

SPECIFIC-GRAVITY 0,0146

1,293 1,38021

$^{2}He = \frac{2}{6{,}02 \times 10^{23}} = \frac{m}{1 Atom} = m = 3{,}31088003 \times 10^{-24}$ g

$\frac{4{,}0026}{6{,}0225 \times 10^{-23}} = 6{,}6460772 \times 10^{-24}$

$N_A = \frac{8{,}925 g}{3{,}31088003 \times 10^{-24} g}$

N_A = 2,16875 4063 × 10^{24} Atoms

$N_A = \frac{8{,}925 g}{6{,}6460772 g}$

N_A = 1,34289743 × 10^{24} ATOMS

16:40

m = 8,925 g

N° OF Atoms (He) = 2,6875 4063 correct × 10^{24}

05/07/2018

MOLAR-MASS ≠ NUCLEONS

$O = 15.9994/N_A = 2{,}6566 \times 10^{-23}$

$H = 1{,}00797/N_A = 1{,}6736 \times 10^{-24}$

$H_2O = 1+1+8 = 10$

$(2 \times H) + (1 \times O) = 1 g/cm^3$

$\frac{10}{6.0225 \times 10^{-23}} = 1{,}66044002 \times 10^{-23}$

$He = 4.0026/N_A = 6{,}6407721 \times 10^{-24}$ g

2-B2

WATER ON EARTH (ESTIMATION) = 10^{21} kg (DENSITY = 1 g/cm³) = 10^{25} g

$m = 10^{25}$ g DENSITY = 1 g/cm³

$V = \frac{10^{25} g}{1 g/cm^3}$

$V = 10^{25} cm^3$

$A = V^3 / V^2$

$N_A = \frac{10^{25} g}{1{,}66044002 \times 10^{-23}}$

$N_A = 6{,}02250000 \times 10^{47}$ Atoms

$\frac{10^{25} g}{2{,}8239477 \times 10^{-23}}$

$N_A = 3{,}54111 8P \times 10^{47}$ Atoms

$2(^{1}H) + (O) = 10$

$H_2O = 1+1+8 = 10$

$\frac{10}{6.0225 \times 10^{-23}} = 1{,}66 \times 10^{-23}$

$cm^3 = (cm^1)(cm^1)(cm^1)$

$DYG = \frac{200}{N_A} = 3{,}32028003 \times 10^{-}$

$H_2O = 2\left(\frac{15.9994}{N_A}\right) + \left(\frac{1{,}00797}{N_A}\right)$

$= 2{,}8239177 \times 10^{-23}$ g