DIVISÃO INDIRETA

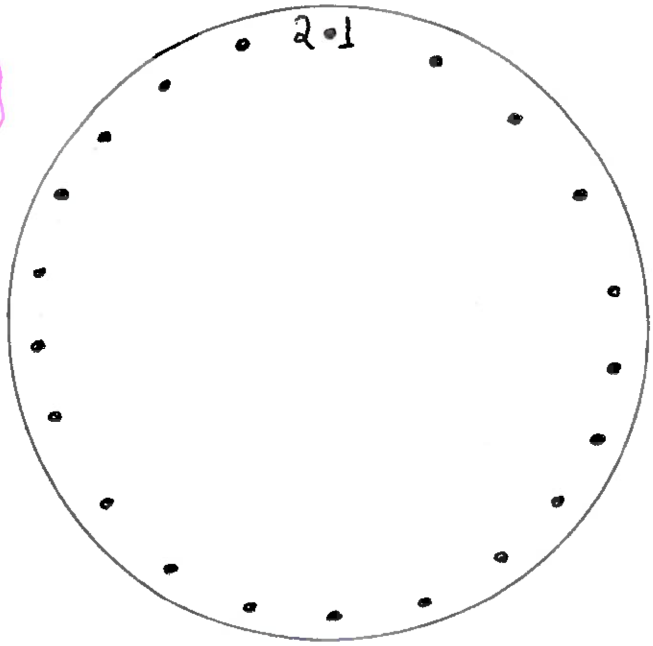
$z = 12$

$40 \div 12 = 3$, resto 4 ($40 - 36 = 4$)

$3\ \frac{4^{\div 4}}{12^{\div 4}} \quad 3\ \frac{1^{\times 7}}{3^{\times 7}} \quad 3\ \frac{7}{21}$

$z = 56$

$\frac{40^{\div 8}}{56^{\div 8}} = \frac{5^{\times 3}}{7^{\times 3}} = \frac{15}{21}$



$z = 13$

$m = 3{,}25$

$40 \div 13 = 3$, resto 1 ($40 - 39 = 1$)

$3\ \frac{1^{\times 3}}{13^{\times 3}} \quad 3\ \frac{3}{39}$

$D_e = m\,(z + 2)$

$D_e = 48{,}75\ mm$

$h = 2{,}166 \cdot m$

$h = 7\ mm$

DIVISÃO DIFERENCIAL

$z = 13$

$m = 3,25$

$z' = 14$

$40 / 14$

$28 \quad 2$

12

$2 \; \frac{12}{14}$

$2 \; \frac{6^{x6}}{7^{x6}}$

$2 \; \frac{36}{42}$

Disco

42 51 53 57

$i = \frac{RD\,(z' - z)}{z'}$ $\quad i = \frac{40}{14}$

$i = \frac{4^{x12}}{7^{x4}} \; \frac{10^{x4}}{2^{x12}}$

$i = \frac{48}{28} \; \frac{40}{24}$

$De = m\,(z + 2)$

$De = 48,75\ mm$

$h = 2,166 \cdot m$

$h = 7\ mm$

DIVISÃO DIFERENCIAL

$z = 23$

$m = 2,0$

DISCO

42 - 51 - 53 - 57

ENGRENAGENS

24 - 24 - 28 - 32 - 40 - 44 - 48 - 56 - 64 - 72 - 86 - 100

$z' = 24$

$40 \mid 24$
$24 \quad 1$
16

$1 \; \frac{16}{24}$ (÷8, ÷8)

$1 \; \frac{2}{3}$ (×14, ×14)

$1 \; \frac{28}{42}$

$i = \frac{RD(z' - z)}{z'} = \frac{40}{24}$

$i = \frac{40}{24}$

$De = m(z + z)$

$De = 50\,mm$

$h = 2,166 \cdot m$

$h = 4,3\,mm$

ENGRENAGEM HELICOIDAL

$z = 15$

$\beta = 20°$

$m = 2,75$

$i = \frac{P_c}{P_h}$

$P_c = RD \cdot P_{fuso}$ $\quad P_c = 40 \cdot 5$ $\quad P_c = 200$

$P_h = \frac{D_p \cdot \pi}{tg\,\beta} = \frac{43,89 \cdot \pi}{tg\,20°} = P_h = 378,89$

$i = \frac{200}{375}$

$D_p = \frac{m}{\cos\beta} \cdot z$ $\quad D_p = \frac{2,75}{\cos 20°} \cdot 15$ $\quad P_p = 43,89$

$i = \frac{200}{375} = \frac{8}{15} = \frac{2^{x24}}{5^{x8}} \quad \frac{4^{x8}}{3^{x24}}$

$$i = \frac{48}{40} \quad \frac{32}{72}$$

40 | 15
30 | 2
10

2 | 10 ÷5
15 ÷5

2 $\quad \frac{2}{3}$

$D_e = D_p + 2m$

$D_e = 49,39\ mm$

$h = 2,166 \cdot m$

$h = 5,95\ mm$