

# Resoluções - Nivelando

## Fatoração

01.  $140 = 2^2 \cdot 5 \cdot 7 = 4 \cdot 5 \cdot 7 = 140$

$500 = 2^2 \cdot 5^3 = 4 \cdot 125 = 500$

$5445 = 3^2 \cdot 5 \cdot 11^2 = 9 \cdot 5 \cdot 121 = 5445$

$650 = 2 \cdot 5^2 \cdot 13 = 2 \cdot 25 \cdot 13 = 650$

$3900 = 2^2 \cdot 3 \cdot 5^2 \cdot 13 = 4 \cdot 3 \cdot 25 \cdot 13 = 3900$

02. a)  $2^2 \cdot 3 \cdot 7^2 = 4 \cdot 3 \cdot 49 = 588$

b)  $2 \cdot 3^2 \cdot 5^2 \cdot 7 = 2 \cdot 9 \cdot 25 \cdot 7 = 3150$

c)  $2^2 \cdot 5 \cdot 11^2 = 4 \cdot 5 \cdot 121 = 2420$

d)  $3^2 \cdot 7 \cdot 11^2 = 9 \cdot 7 \cdot 121 = 7623$

e)  $2^2 \cdot 7 \cdot 13 = 4 \cdot 7 \cdot 13 = 364$

03.  $1200 \quad 2$

$600 \quad 2$

$300 \quad 2$

$150 \quad 2$

$75 \quad 3$

$25 \quad 5$

$5 \quad 5$

$1 \quad 2^4 \cdot 3^1 \cdot 5^2 \quad 4 + 1 + 2 = 7$

04.  $1620 \quad 2$

$n = 24$

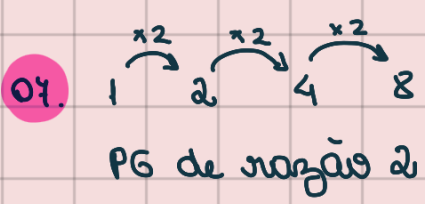
1620	2
810	2
405	3
135	3
45	3
15	3
5	5
1	$2^2 \cdot 3^4 \cdot 5$

05.	4, 5, 7	2
	2, 5, 7	2
	1, 5, 7	5
	1, 1, 7	7
	1, 1, 1	$MMC = 2^2 \cdot 5 \cdot 7 = 140 \text{ dias}$

06.	a)	36, 40, 32	2
		18, 20, 16	2
		9, 10, 8	$MDC = 2^2 = 4$

4 kits no total

b)	$36 \overline{) 4}$	$40 \overline{) 4}$	$32 \overline{) 4}$
	9 canetas	10 lápis	8 borrachas



$$1024 = 2^{10}$$

$$16 = 2^4$$

$$1024 \cdot 16 = 16384$$

$2^{10} \cdot 2^4 = 2^{14}$  → depois de 14 aumentos → no 15º dia

08.	2025	3
	675	3

225	3
75	3
25	5
5	5
1	$3^4 \cdot 5^2$

$$(4+1) \cdot (2+1) = 5 \cdot 3 = 15 \text{ divisores}$$

09.

72, 126, 216	2
36, 63, 108	2
18, 63, 54	2
9, 63, 27	3
3, 21, 9	3
1, 7, 3	3
1, 7, 1	7
1, 1, 1	MDC = 2 · 3 · 3 = 18

$$18 = 1 + 8 = 9$$

(B)

10.

81, 45	3
27, 15	3
9, 5	MDC = 9

↳ cada pilha terá 9 placos

81 | 9

45 | 9

9 pilhas de marrom

5 pilhas de branca

$$9 + 5 = 14 \text{ pilhas}$$

(C)

11.

540, 810, 1080	2
270, 405, 540	2
135, 405, 270	2
135, 405, 135	3
45, 135, 45	3
15, 45, 15	3
5, 15, 5	3
5, 5, 5	5

540 | 135

810 | 135

1080 | 135

4

6

8

$$4 \cdot 40 = 160$$

$$6 \cdot 30 = 180$$

$$8 \cdot 10 = 80$$

$$160 + 180 + 80 = 420$$

(E)

← maior do que 2m

1, 1, 1 | MMC = ~~2~~ · 3<sup>3</sup> · 5 = 270

↳ tiramos o menor número primo para descrever o segundo maior divisor comum

$3^3 \cdot 5 = 135 \rightarrow$  menor que 2m ✓

12.

350	224	2
175	112	7
25	16	MDC = 14

350 | 14  
25 grupos de meninas

226 | 14  
16 grupos de meninas

$25 + 16 = 41$  professoras

(E)

13.

400	320	2
200	160	2
100	80	2
50	40	2
25	20	5
5	4	MDC = 2 <sup>4</sup> · 5 = 80

ingressos por escola

400 | 80    320 | 80  
5            4

(C)

$5 + 4 = 9$  escolas

- 14.
- A → 0, 8, 16, 24, 32
  - B → 0, 7, 14, 21, 28
  - C → 0, 6, 12, 18, 24
  - P → 0, 4, 8, 12, 16, 20, 24, 28

PRIMEIRA (A)

SEGUNDA (C)

(D)

15.	40, 45, 54	2
	20, 45, 27	2
	10, 45, 27	2
	5, 45, 27	3
	5, 15, 9	3
	5, 5, 3	3
	5, 5, 1	5
	1, 1, 1	

---


$$\text{MMC} = 1080$$

$$1080 \cdot 2 = 2160$$

$$+ 20 = 2180$$

9