$-20a^2-149a-203$ [5]

Expand and simplify the following expression:

$$(2a-5)(3a+1)-2(5a-3)^2+4(6a+5)(a-9)$$

$6a^2+2a-15a-5-2(25a^2-30a+9)+4(6a^2-54a+5a-45)$

$6a^2-13a-5-50a^2+60a-18+24a^2-216a+20a-180$

$= -20a^2-149a-203$

Factoring

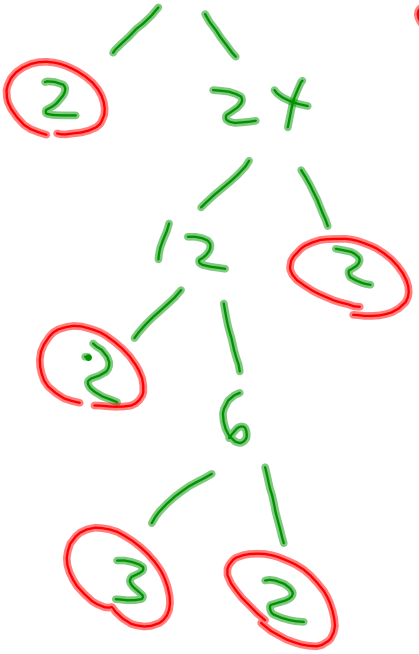
4 & 3 are FACTORS of 12

PRIME NUMBER: 2, 3, 5, 7, 11, 13, ...

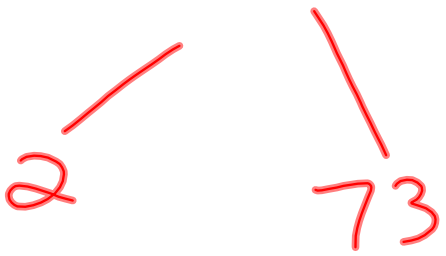
⇒ Only factors are 1 and itself

PRIME FACTORIZATION

ex. 48 $= 2^4 \cdot 3$



2/ $146 = 2 \times 73$



3/ $288 = 2^5 \cdot 3^2$

Greatest Common Factor (GCF)

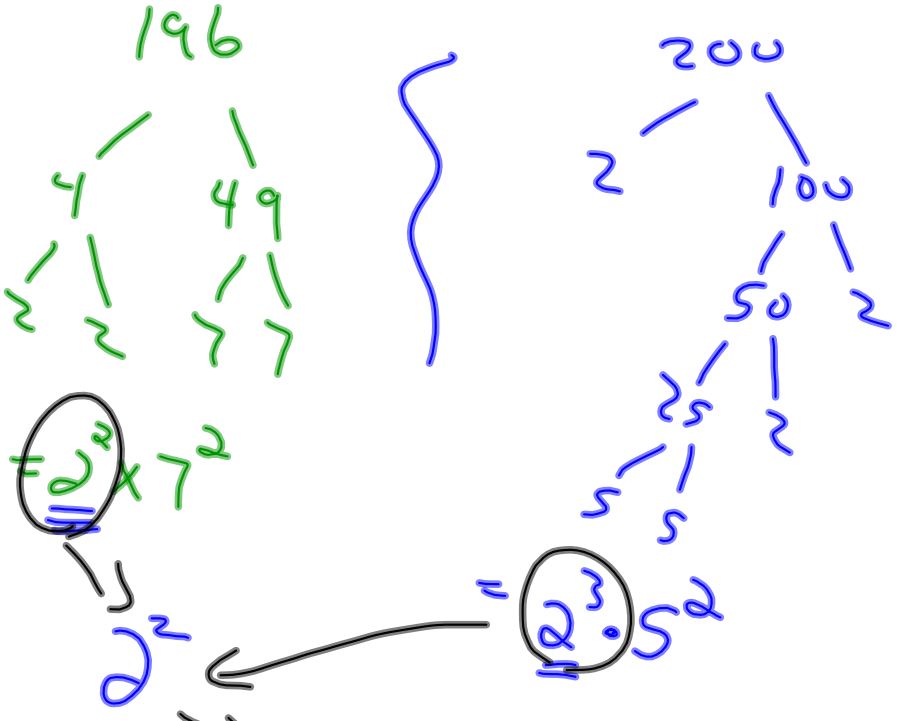
4 and 5 $\Rightarrow$ GCF = 1

14 and 21 $\Rightarrow$ GCF = 7

24 and 18 $\Rightarrow$ GCF = 6

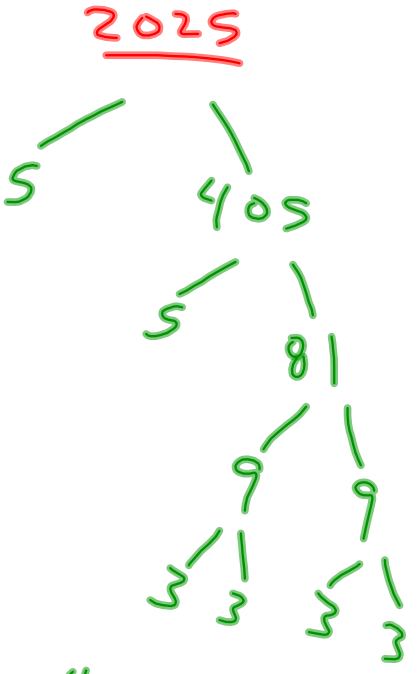
} Greatest Number that divides into BOTH

196 and 200



GCF $\Rightarrow$ "Lowest Power of all Repeated Prime Factors"

315 and 2025 ... GCF?

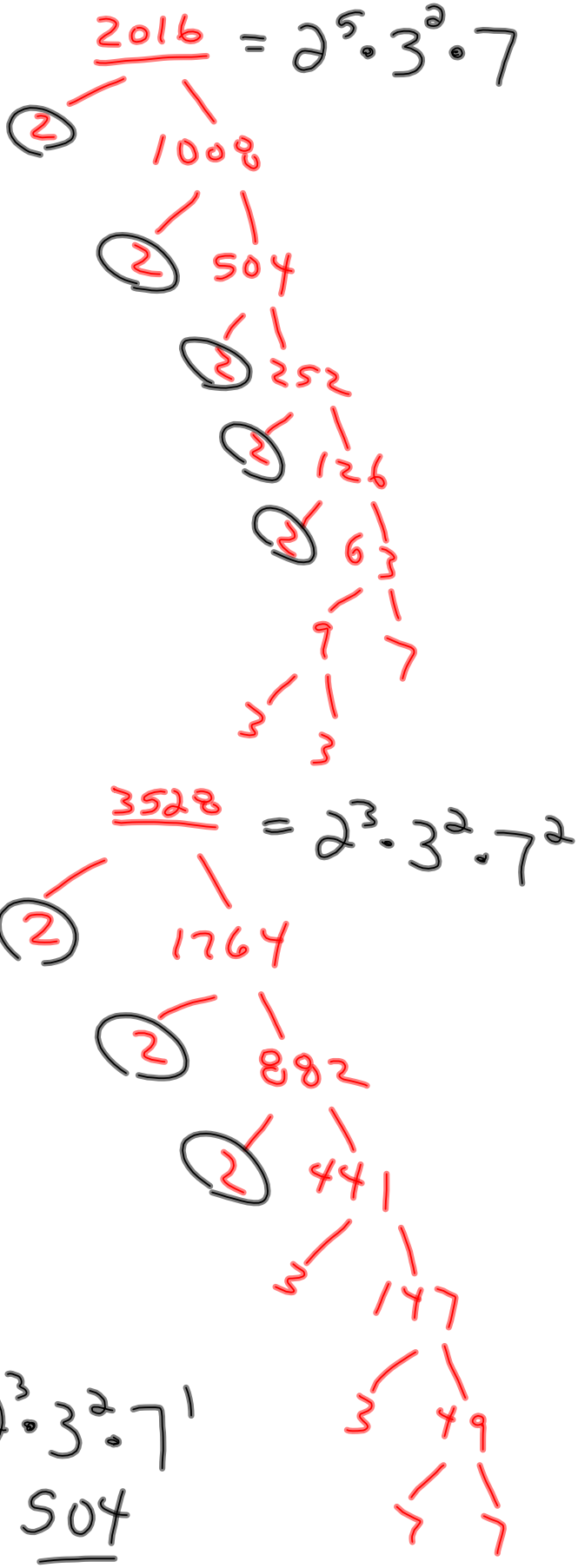


Common Factors ..

$= 3^2 \cdot 5^1$

$= 45$ GCF

2016 and 3528



GCF = $2^3 \cdot 3^2 \cdot 7^1$

= 504

Least Common Multiple (LCM)

- 3 and 5 $\Rightarrow$ 15
- 4 and 6 $\Rightarrow$ 12

$\hookrightarrow$ Smallest number that the two will divide evenly into

ex.

7	and	11
14		22
21		33
28		44
35		55
42		66
49		77
⋮		
77		

$\Rightarrow$ ex. 12, 4, 8 $\Rightarrow$ 24

7, 8, 5 $\Rightarrow$ 7 x 8 x 5

Pg. 140
#8, 9, 10, 11, 16