What is LCM?

IT IS THE LEAST MULTIPLE OF ALL OF THE COMMON MULTIPLES

It can be found using several methods.

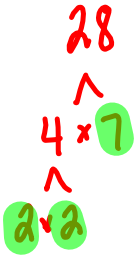
Method 1: List multiples of two or more numbers and identify the least multiple that they have in common.

12 24 36 48 60 72 84 96 108 120 132 144 156 168 180

28 56 84 112 140 168 196

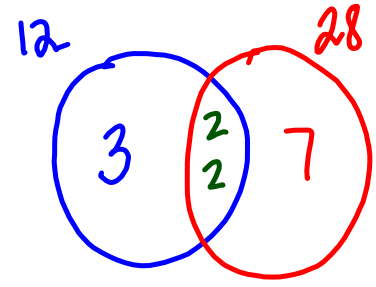
LCM = 84

Method 2A and 2B: Determine the prime factorization of two or more numbers.



Method 2A:

Using the prime factorizations, fill in a Venn Diagram that shows the prime factors that the numbers share and do not share. To determine the LCM, multiply all of the prime factors in the entire Venn Diagram.



LCM: 2·2·3·7 = 84

~~2·2·3~~ ~~2·2·7~~

Method 2B:

Using the prime factorizations in exponent form, compare the prime factors of each number. Compare ALL of the prime factors with the same base. Choose the base and exponent with the largest exponent for each of the common prime factors.

$12 = 2^2 \cdot 3$

$28 = 2^2 \cdot 7$

$LCM = 2^2 \cdot 3 \cdot 7 = 84$

$2 \cdot 2 \cdot 3 \cdot 7$

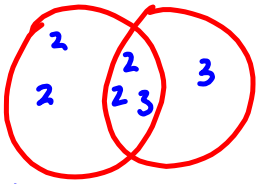
Words/Situations that can classify/identify a question as LCM:

L	C	M
Least	Common	Multiple
Smallest	Alike	Multiply
Tiniest	Identical	* Something happens repeatedly
Minimum	Same	
Next	Similar	
First	Equal	
	Even	
	Equivalent	

HINT: Something happens over and over again until it happens at the Same time!

Every 48 minutes Kyle breaks wind. Every 36 minutes Ryan burps. Right when the announcements came on at 8:00 am Kyle broke wind and Ryan burped. How many minutes will pass until they break wind and burp together at the same time? What time will this be?

48: $2 \cdot 2 \cdot 2 \cdot 2 \cdot 3$ 36: $2 \cdot 2 \cdot 3 \cdot 3$



LCM: $2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 = 144$ min will pass

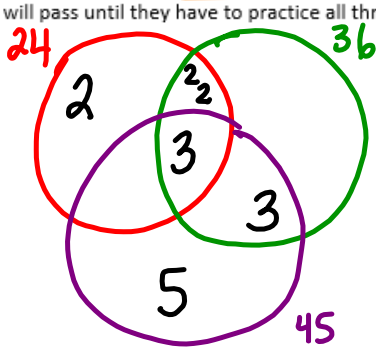
144 − 60 = 1 hr 10:24 am

84 − 60 = 1 hr

24

The Army Special Forces follow a regular routine for training. They practice jumping out of helicopters every 24 days, repelling every 36 days, and water survival every 45 days. How many days will pass until they have to practice all three events on the same day?

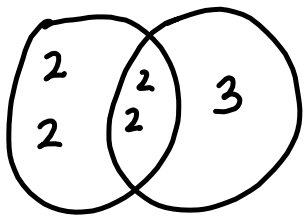
24: $2 \cdot 2 \cdot 2 \cdot 3$ 36: $2 \cdot 2 \cdot 3 \cdot 3$ 45: $3 \cdot 3 \cdot 5$



LCM: $2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 5 = 360$ days

Gina is making first aid kits for the local police department. Band-Aids' come in packs of 16. Gauze comes in packs of 12. What is the smallest amount of Band-Aids and gauze that can buy so that she will have the same amount of both? How many packages of Band-Aids and gauze is that?

16: $2 \cdot 2 \cdot 2 \cdot 2$ 12: $2 \cdot 2 \cdot 3$



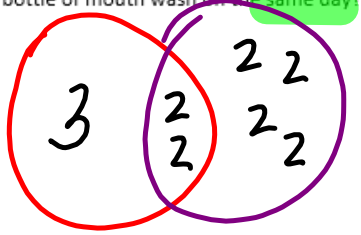
LCM: $2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 = 48$ band-aids and gauze

$48 \div 16 = 3$ packs of band-aids

$48 \div 12 = 4$ packs of gauze

Tommy the Tooth loves toothpaste and mouth wash. He notices that his toothpaste has 12 ounces in each tube. He also notices that his mouth wash has 64 ounces in each bottle. He uses exactly one ounce of toothpaste and one ounce of mouth wash each day. How many days will pass until he empties a tube of toothpaste and a bottle of mouth wash on the same day?

12: $2 \cdot 2 \cdot 3$ 64: $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$



LCM: $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3$

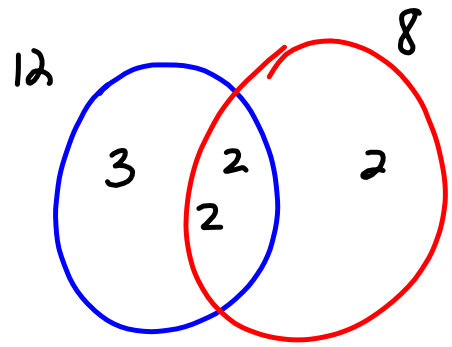
192 days

12

$2 \cdot 2 \cdot 3$

8

$2 \cdot 2 \cdot 2$



LCM: $2 \cdot 2 \cdot 2 \cdot 3 = 24$

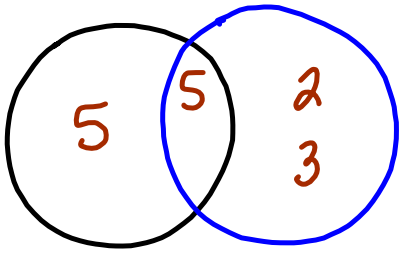
25

$5 \cdot 5$

30

$6 \cdot 5$

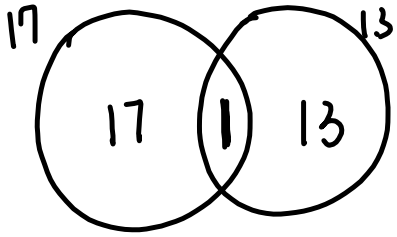
$2 \cdot 3$



LCM: $2 \cdot 3 \cdot 5 \cdot 5 = 150$

$17 = 1 \cdot 17$

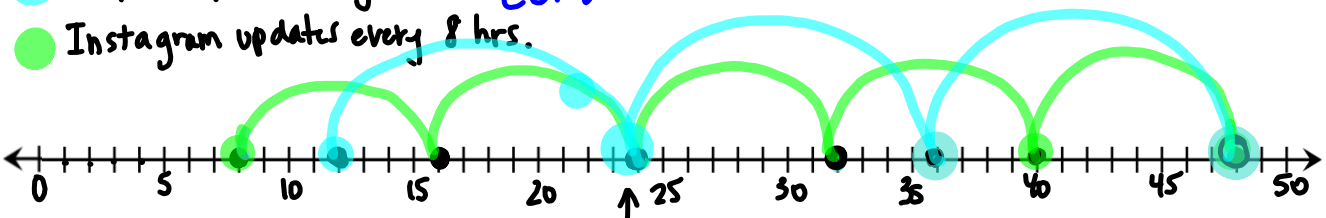
$13 = 1 \cdot 13$



LCM: $17 \times 13 = 221$

Snapchat updates every 12 hrs LCM

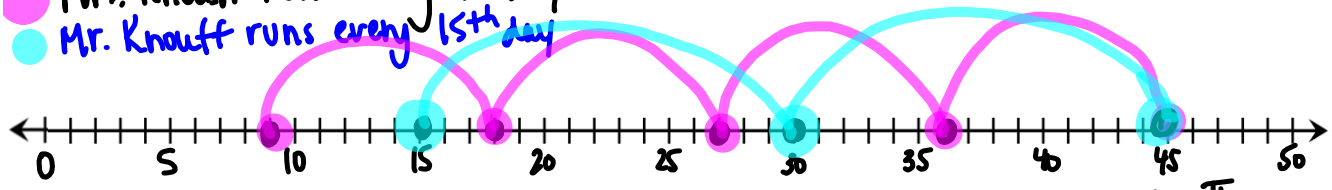
Instagram updates every 8 hrs.



LCM = 24 hrs to update at the same time.

Mrs. Knouff runs every 9th day

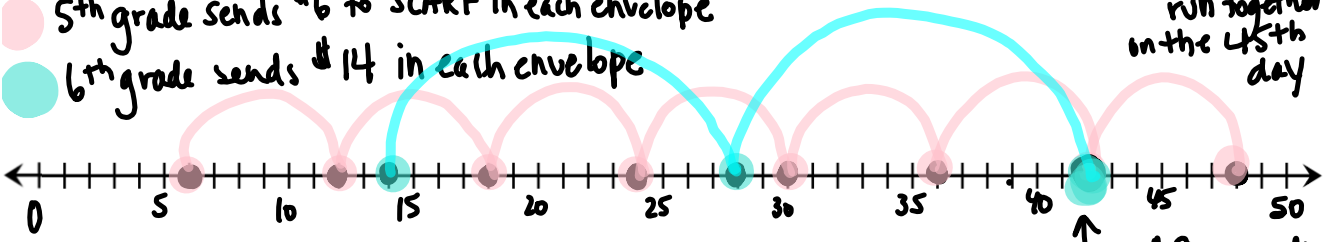
Mr. Knouff runs every 15th day



They run together on the 45th day

5th grade sends #6 to SCARF in each envelope

6th grade sends #14 in each envelope



After sending LCM = $42 both grades will send the same amount.