

Do Now:

Write the prime factorization

1.) 32

2.) 96

Factor the monomial.

3.) $9xy^2$

4.) $12a^3b^2$

Do Now: (Do Not Copy, Just Answer)

Students at your school are planning to hand out pep rally packs to support your school's athletic program. The students have 240 bumper stickers, 360 pennants and 720 pencils. Every pack must have the same contents, and no items should be left over. What is the greatest number of packs that can be made? What will each pack contain?

$$240 = 2^4 \cdot 3 \cdot 5$$

$$360 = 2^3 \cdot 3^2 \cdot 5$$

$$720 = 2^4 \cdot 3^2 \cdot 5$$

$$\text{GCF} = 5 \cdot 2^3 \cdot 3$$

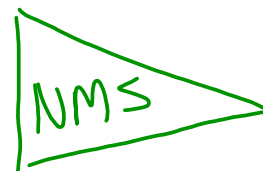
$$= 5 \cdot 8 \cdot 3$$

$$= 40 \cdot 3 = 120$$

$$\text{Bumper Stickers } 240 \div 120 = 2$$

$$\text{Pennants } 360 \div 120 = 3$$

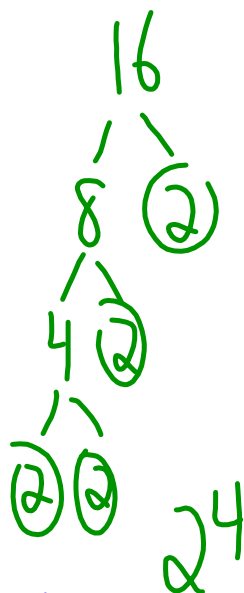
$$\text{Pencils } 720 \div 120 = 6$$



120 packs of 2 bumper stickers, 3 pennants, and 6 pencils

(25) $12x^2y^2$ and $16xy^3$

$2z^2$
 $4xy^2$
 $15bc$



$$12x^2y^2 = 2^2 \cdot 3 \cdot x \cdot x \cdot y \cdot y$$

$$16xy^3 = 2^4 \cdot x \cdot y \cdot y \cdot y$$

$$\text{GCF} = 2^2 \cdot x \cdot y^2$$

$$= 4xy^2$$

Do Now:

1. Find the GCF of 22 and 38.
2. Find the GCF of 99 and 112.
3. Find the GCF of $15x^2y$ and $18xy^2$

4.4 Least Common Multiple

(LCM)

7.NS

7.EE

- SWBAT find the least common multiple of two numbers.
- SWBAT understand relationships among numbers.
- SWBAT grasp connections among math ideas. Understand how math ideas build on one another.

- Calculators: No

A **multiple** is the product of a number and any nonzero number. *multiplication*

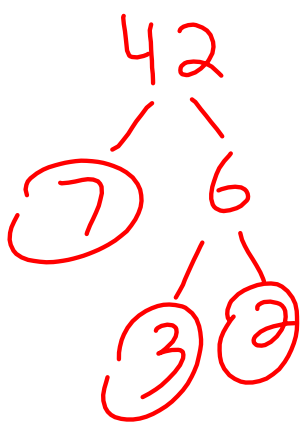
A **common multiple** is a multiple that is shared by two or more whole numbers.

The **least common multiple** is the smallest whole number multiple shared by two or more numbers.

Method to Find the LCM

1. Write the prime factorization of each number
2. Find the product of the highest power of each prime number

Example: Find the LCM of 42 and 70



$$42 = 2 \cdot 3 \cdot 7$$

$$70 = 2 \cdot 5 \cdot 7$$

Common

$$\begin{aligned} \text{GCF} &= 2 \cdot 7 \\ &= 14 \end{aligned}$$

$$42 = \underline{2} \cdot \underline{3} \cdot 7$$

$$70 = 2 \cdot \underline{5} \cdot \underline{7}$$

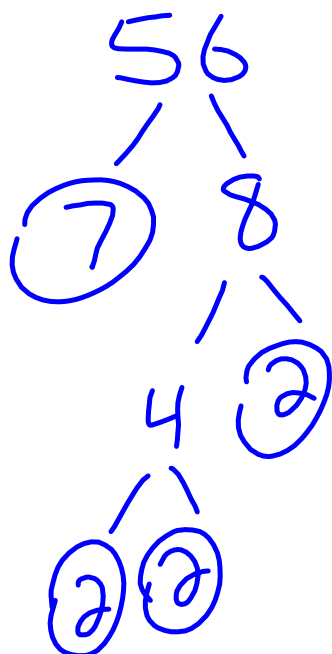
$$\text{LCM} = 2 \cdot 3 \cdot 5 \cdot 7$$

$$= 6 \cdot 5 \cdot 7$$

$$= 30 \cdot 7$$

$$\text{LCM} = 210$$

Find the LCM of 56 and 84.

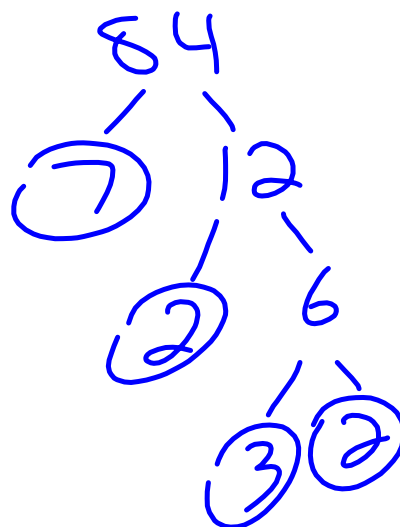


$$56 = 2^3 \cdot 7$$

$$56 = 2^3 \cdot 7$$

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

$$\begin{aligned} \text{LCM} &= 2^3 \cdot 3 \cdot 7 \\ &= 8 \cdot 3 \cdot 7 \\ &= 24 \cdot 7 \\ &= \textcircled{168} \end{aligned}$$



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

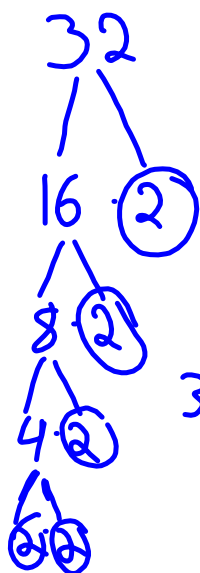
Common

$$\begin{aligned} \text{GCF} &= 2^2 \cdot 7 \\ &= 4 \cdot 7 \\ &= \textcircled{28} \end{aligned}$$

$$\begin{array}{r} 224 \\ \times 7 \\ \hline 168 \end{array}$$

Find the LCM of 4 and 20.

Find the LCM of 32, 96 and 120.



$$32 = 2^5$$

$$96 = 2^5 \cdot 3$$

$$120 = 2^3 \cdot 3 \cdot 5$$

$$\begin{array}{ccc} 32 & 96 & 120 \\ 2^5 & 2^5 \cdot 3 & 2^3 \cdot 3 \cdot 5 \end{array}$$

$$\text{LCM} = 2^5 \cdot 3 \cdot 5$$

$$\text{GCF} = 2^3 = 8$$

$$\begin{array}{r} 32 \\ \times 15 \\ \hline 160 \\ + 320 \\ \hline 480 \end{array}$$

$$\begin{aligned} &= 32 \cdot 3 \cdot 5 \\ &= 96 \cdot 5 \\ &= 480 \end{aligned}$$

Find the LCM of 16, 20 and 28.

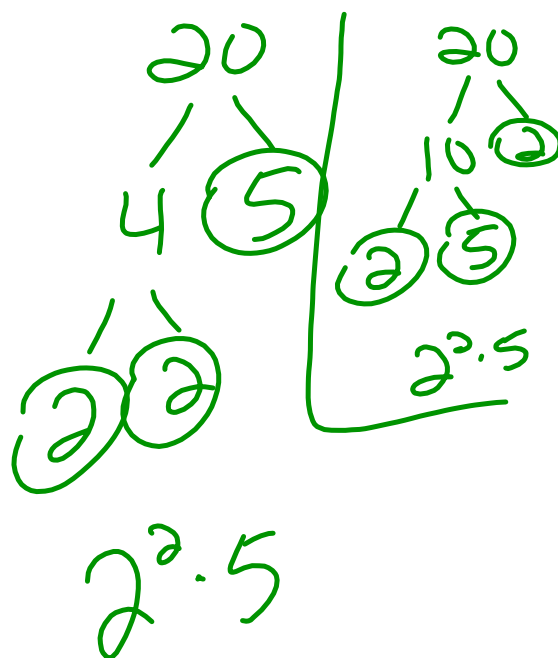
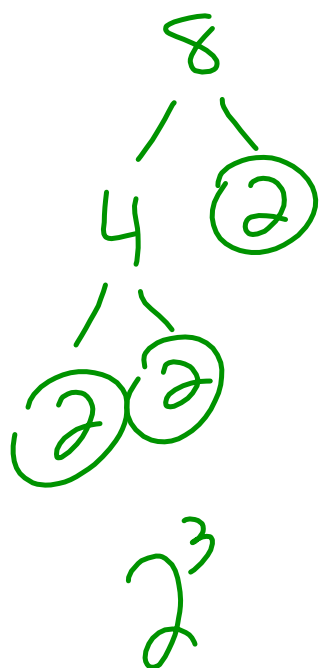
Find the LCM of 24, 36, and 72.

A vet at an animal clinic is on call every four days. Today is Saturday, and the vet is on call. In how many more days will the vet be on call on a Saturday again?

An additional vet is on call every 5 days, beginning with Monday. How long will it be before the on-call day is again Monday?

Find the LCM of $6x^2y$ and $9x^4z$

Find the LCM of $8a^3b^2$ and $20ab^4$



$$8a^3b^2 = 2^3 \cdot a^3 \cdot b^2$$

$$20ab^4 = 2^2 \cdot 5 \cdot a \cdot b^4$$

Common

$$\begin{aligned} \text{GCF} &= 2^2 \cdot a \cdot b^2 \\ &= 4ab^2 \end{aligned}$$

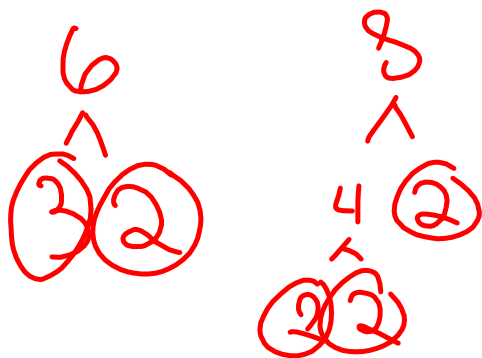
LCM =

$$2^3 \cdot 5 \cdot a^3 \cdot b^4$$

$$8 \cdot 5 \cdot a^3 \cdot b^4$$

$$40a^3b^4$$

Find the LCM of $6m^3np^2$ and $8mp^3$
and GCF



$$\begin{aligned}
 &2^3 \cdot m \cdot p \\
 &2 \cdot 3 \cdot m^3 \cdot n \cdot p^2 \\
 &3 \cdot 2^3 \cdot m^3 \cdot p^3
 \end{aligned}$$

$$\begin{aligned}
 \text{LCM} &= 24m^3p^3 \cdot n \\
 \text{GCF} &= 2mp^2
 \end{aligned}$$

Exit Pass 4.4

Describe and correct the error in the solution.

Find the LCM of 84 and 120.

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

$$120 = 2^3 \cdot 3 \cdot 5$$

The LCM is $2^2 \cdot 3$, which equals 12.

"Don't blame the sea if you cannot catch a fish."

Working individually or with a partner, complete the workbook.

Workbook pg.



Reflection of Today's Lesson

4.4 Least Common Multiple

7.NS

7.EE

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 - SWBAT understand relationships among numbers.
 - SWBAT grasp connections among math ideas. Understand how math ideas build on one another.
-
- Calculators: No

Homework

pg. 188-189 #12-22 evens, 25, 26, 42-44

