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# Gcf lcm word problems worksheet pdf

Empty Layer.Empty Layer.Empty Layer.Empty Layer.Empty Layer.Empty Layer.Empty Layer.Empty Layer.Empty Layer.Empty Layer.Empty Layer.71 teachers like this lessonPrint LessonSWBAT: • Define LCM, and GCF • Solve word problems involving LCM and GCF. When would you come across GCF and LCM? Students apply their knowledge of GCF and LCM to solve word problems.See my Do Now in my Strategy folder that explains my beginning of class routines. Often, I create do nows that have problems that connect to the task that students will be working on that day. Here, students are reviewing factors, multiples, GCF, and LCM. A common mistake is students confuse GCF and LCM. I quickly go over correct answers with students.I have students work in partners on these two problems. I don't mention anything about LCM and GCF. If students struggle, that's okay. I encourage them to use what they know to do something. Students will use different strategies to solve these problems, and that's great! After about 10 minutes I have students go to the next page. Students participate in a Think Write Pair Share. I want students to notice that problem 1 is asking for the smallest number of buns and hot dogs you need to buy if you want the same number of each. Some students will connect this to finding the LCM of 8 and 10. I want student to notice that problem 2 is splitting pearls and beads up into equal groups. The question is asking for the largest number of identical necklaces. Some students will connect this to GCF. I use the ticket to go data from the previous lesson (Multiples, LCM, and GCF) to create homogeneous groups for this part of the lesson. This way students can work with other students who are around their same skill level. I go over group expectations and pass out the Group Work Rubric. I have printed one set of GCF and LCM problem cards for each group. I cut them out and put them in an envelope. I explain that students will receive an envelope with the problems they will work on. See my Creating Homogeneous Groups and Using the Group Work Rubric videos in my Strategy Folder for more details. As students are working I walk around to fill out rubrics and monitor student progress. I am looking to see what strategies students are using and how they are showing their work. Students are engaging with MP 1: Make sense of problems and persevere in solving them. If students struggle I may intervene in one of these ways: What is the problem asking? What do you know from the problem? What do you see going on in your head when you read this problem? How could you show what is going on in the problem? Look back at problem A and B. Is this problem similar to either of those problems? Why or why not? Offer the student(s) a multiplication chart or Factor reference sheet I Post A Key around the room, so groups can check their answers as the complete them. If a group successfully completes the problems, they can work on the challenge problems. In order to continue enjoying our site, we ask that you confirm your identity as a human. Thank you very much for your cooperation. Below are two grade 5 math worksheets with word problems needing the use of greatest common factors (GCFs) or least common multiples (LCMs) to solve. Mixing GCF and LCM word problems encourages students to read and think about the questions, rather than simply recognizing a pattern to the solutions. These worksheets are pdf files. Greatest Common Factor (GCF) A common multiple is a number that is a multiple of two or more numbers. Common multiples of 2 and 3 are 0, 6, 12, 18, ... The least common multiple (LCM) of two numbers is the smallest number (excluding zero) that is a multiple of both of the numbers. The highest common factor is found by multiplying all the factors which appear in both lists: So the HCF of 60 and 72 is  $2 \times 2 \times 3$  which is 12. The lowest common multiple is found by multiplying all the factors which appear in either list: So the LCM of 60 and 72 is  $2 \times 2 \times 2 \times 3 \times 3 \times 5$  which is 360. For example, for LCM (12,30) we find: Prime factorization of 12 =  $2 \times 2 \times 3 = 2^2 \times 3^1$  \* 5. 0 Prime factorization of 30 =  $2 \times 3 \times 5 = 2^1 \times 3^1 \times 5^1$ . 1 Using the set of prime numbers from each set with the highest exponent value we take  $2^2 \times 3^1 \times 5^1 = 60$ . Therefore LCM (12,30) = 60. A common multiple is a number that is a multiple of two or more numbers. Common multiples of 2 and 3 are 0, 6, 12, 18, ... The least common multiple (LCM) of two numbers is the smallest number (excluding zero) that is a multiple of both of the numbers. In worksheet on word problems on H.C.F. and L.C.M. we will find the greatest common factor of two or more numbers and the least common multiple of two or more numbers and their word problems.I. Find the highest common factor and least common multiple of the following pairs of numbers:(i) 576 and 1440(ii) 625 and 325(iii) 496 and 1116(iv) 1000 and 1125(v) 676 and 650 II. Word problems on highest common factor (H.C.F.) and lowest common multiple (L.C.M.): (i) The product of two numbers is 120. If their H.C.F. is 6 what is their L.C.M.(ii) Find the smallest number which, on being added 23 to it, is exactly divisible by 32, 36, 48 and 96. (iii) Find the least length of a rope which can be cut into whole number of pieces of lengths 45 cm, 75 cm and 81 cm. (iv) Find the greatest number of 4-digits which is exactly divisible by 40, 48 and 60.(v) What is the least number of saplings that can be arranged in rows of 12, 15 or 40 in each row?(vi) 210 oranges, 252 apples and 294 pears are equally packed in cartons so that no fruit is left. What is the biggest possible number of cartons needed?(vii) A certain number of students can be arranged in groups of 3, 4, 6 or 8 with no student left behind. Find the number of students.(viii) The local bus service has 2 lines of buses that start together at 8 a.m. Buses on line A leave after every 15 minutes while Buses on line B leave after every 20 minutes. In a day, how many times do buses on both line A and B leave together between 8 a.m. and 11 a.m. (ix) Three painters Ron, Victor and Shelly are painting the rooms of a hotel which are numbered from 15 – 200. Ron has to work in all the rooms. Victor has to work in rooms where the room number is a multiple of 3. Shelly has to work in rooms where the room number is a multiple of 5. In which rooms will they all work together?(x) Sara goes to the shopping mall every 6th day. Andy goes to the same shopping mall every 7th day. How many times will they meet in the mall in the month of December and January if we start counting from 1st December? (xi) The HCF of two numbers is 6, if one of the numbers is 42, find the other number? (xii) Find the greatest number of 5-digits which on being divided by 9, 12, 24 and 45 leaves 3, 6, 18 and 39 as remainders respectively. (xiii) The length, breadth, height of a room are 6 m 80 cm, 5 m 10 cm and 3 m 40 cm respectively. Find the longest tape which can measure the dimensions of the room exactly.(xiv) Sam can jump 4 steps at a time and Nina can jump 5 steps at a time. On which of the steps will both meet if both start jumping together?(xv) Mary has a dance class every 2nd day and painting class every 3rd day. On which of the day will she have both the classes?(xvi) Find a multiple of 70 which is between 200 and 600 which has odd digits at tens and hundreds place.(xvii) Find a multiple of 120 which lies between 400 and 500 where the digit at tens place is double the digit at hundreds place. (xviii) Shane wants to plant 28 marigold plants and 36 rose plants in his garden. What is the greatest number of rows possible if each row has the same number of marigold plants and the same number of rose plants. Answers for the worksheet on H.C.F. and L.C.M. are given below.Answers:I. (i) 288; 2880(ii) 25; 8125(iii) 124; 4464(iv) 135; 9000(v) 26; 16900II. (i) 20(ii) 265(iii) 2025 cm(iv) 9840(v) 120(vi) 42(vii) 24(viii) 3(ix) 150, 165, 180, 195(x) 1(xi) 90(xii) 99714(xiii) 1 m 70 cm(xiv) 20(xv) 6(xvi) 350(xvii) 480 (xviii) 4 In 4th grade factors and multiples worksheet we will find the factors of a number by using multiplication method, find the even and odd numbers, find the prime numbers and composite numbers, find the prime factors, find the common factors, find the HCF(highest common factors) Examples on multiples on different types of questions on multiples are discussed here step-by-step. Every number is a multiple of itself. Every number is a multiple of 1. Every multiple of a number is either greater than or equal to the number. Product of two or more numbers Let us consider some of the word problems on L.C.M. (least common multiple). 1. Find the lowest number which is exactly divisible by 18 and 24. We find the L.C.M. of 18 and 24 to get the required number. Let us consider some of the word problems on H.C.F. (highest common factor). 1. Two wires are 12 m and 16 m long. The wires are to be cut into pieces of equal length. Find the maximum length of each piece. 2.Find the greatest number which is less by 2 to divide 24, 28 and 64 The least common multiple (L.C.M.) of two or more numbers is the smallest number which can be exactly divided by each of the given number. The lowest common multiple or LCM of two or more numbers is the smallest of all common multiples. Common multiples of two or more given numbers are the numbers which can exactly be divided by each of the given numbers. Consider the following. (i) Multiples of 3 are: 3, 6, 9, 12, 15, 18, 21, 24, .....etc. Multiples of 4 are: 4, 8, 12, 16, 20, 24, 28, ..... etc. In worksheet on multiples of that numbers, all grade students can practice the questions on multiples. This exercise sheet on multiples can be practiced by the students to get more ideas on the numbers that are being multiplied. 1. Write any four multiples of: 7 Prime factorisation or complete factorisation of the given number is to express a given number as a product of prime factor. When a number is expressed as the product of its prime factors, it is called prime factorization. For example,  $6 = 2 \times 3$ . So 2 and 3 are prime factors Prime factor is the factor of the given number which is a prime number also. How to find the prime factors of a number? Let us take an example to find prime factors of 210. We need to divide 210 by the first prime number 2 we get 105. Now we need to divide 105 by the prime The properties of multiples are discussed step by step according to its property. Every number is a multiple of 1. Every number is the multiple of itself. Zero (0) is a multiple of every number. Every multiple except zero is either equal to or greater than any of its factors What are multiples? The product obtained on multiplying two or more whole numbers is called a multiple of that number or the numbers being multiplied. We know that when two numbers are multiplied the result is called the product or the multiple of given numbers. Practice the questions given in the worksheet on hcf (highest common factor) by factorization method, prime factorization method and division method. Find the common factors of the following numbers. (i) 6 and 8 (ii) 9 and 15 (iii) 16 and 18 (iv) 16 and 28 In this method we first divide the greater number by the smaller number. The remainder becomes the new divisor and the previous divisor as the new dividend. We continue the process until we get 0 remainder. Finding highest common factor (H.C.F) by prime factorization for We will discuss here about the method of h.c.f. (highest common factor). The highest common factor or HCF of two or more numbers is the greatest number which divides exactly the given numbers. Let us consider two numbers 16 and 24. Common factors of two or more numbers are a number which divides each of the given numbers exactly. For examples 1. Find the common factor of 6 and 8. Factor of 6 = 1, 2, 3 and 6. Factor ● Multiples.Common Multiples.Least Common Multiple (L.C.M.)To find Least Common Multiple by using Prime Factorization Method.Examples to find Least Common Multiple by using Prime Factorization Method.To Find Lowest Common Multiple by using Division MethodExamples to find Least Common Multiple of two numbers by using Division MethodExamples to find Least Common Multiple of three numbers by using Division MethodRelationship between H.C.F. and L.C.M.Word problems on H.C.F. and L.C.M.Worksheet on word problems on H.C.F. and L.C.M. 5th Grade Math Problems From Worksheet on word problems on H.C.F. and L.C.M. to HOME PAGE Didn't find what you were looking for? Or want to know more information about Math Only Math. Use this Google Search to find what you need. Share this page: What's this? Problem 1 :The sum of two numbers is 588 and their greatest common factor (GCF) is 49. How many such pairs of numbers can be formed ?Solution :Because the GCF 49, the two numbers can be assumed as 49x and 49y.Their sum is 588. Then 49x + 49y = 588Divide each side 49x + y = 12We have to find the values of x and y such that their sum is 12.The possible pairs of values of (x, y) are(1, 11), (2, 10), (3, 9), (4, 8), (5, 7), (6, 6)In the above pairs of values, only co-primes will meet the condition given in the question.[Co-primes = Two integers are said to be co-primes or relatively prime if they have no common positive factor other than 1 or, equivalently, if their greatest common divisor is 1].In the above pairs, (1, 11) and (5, 7) are the co-primes. Hence, the number of pairs is 2.Problem 2 :The product of two numbers is 2028 and their greatest common factor (GCF) is 13. Find the number of such pairs.Solution :Since the GCF is 13, the two numbers could be 13x and 13y.Their product is 2028. Then(13x) · (13y) = 2028Divide each side by 169xy = 12We have to find the values of x and y such that their product is 12.The possible pairs of values of (x, y) are(1, 12), (2, 6), (3, 4)In the above pairs of values, only co-primes will meet the condition given in the question.In the above pairs, (1, 12) and (3, 4) are the co-primes.Hence, the number of pairs is 2.Problem 3 :Lenin is preparing dinner plates. He has 12 pieces of chicken and 16 rolls. If he wants to make all the plates identical without any food left over, what is the greatest number of plates Lenin can prepare ?Solution : To make all the plates identical and find the greatest number of plates, we have to find the greatest number that can divide 12 and 16 evenly. That is the highest common factor of 12 and 16.GCF (12, 16) = 4That is, 12 pieces of chicken would be served in 4 plates at the rate of 3 pieces per plate.And 16 rolls would be served in 4 plates at the rate of 4 rolls per plate.In this way, each of the 4 plates would have 3 pieces of chicken and 4 rolls. And all the 4 plates would be identical.Hence, the greatest number of plates Lenin can prepare is 4.Problem 4 :The drama club meets in the school auditorium every 2 days, and the choir meets there every 5 days. If the groups are both meeting in the auditorium today, then how many days from now will they next have to share the auditorium ?Solution :If the drama club meets today, again they will meet after 2, 4, 6, 8, 10, 12,.... days.Like this, if the choir meets today, again they will meet after 5, 10, 15, 20, .... days.From the explanation above, if both drama club and choir meet in the auditorium today, again, they will meet after 10 days.And also, 10 is the least common multiple of (2, 5).Hence, both the groups will share the auditorium after ten days.Problem 5 :John is printing orange and green forms. He notices that 3 orange forms fit on a page, and 5 green forms fit on a page. If John wants to print the exact same number of orange and green forms, what is the minimum number of each form that he could print ?Solution :The condition of the question is, the number of orange forms taken must be equal to the number of green forms taken.Let us assume that he takes 10 orange and 10 green forms.10 green forms can be fit exactly on 2 pages at 5 forms/page. But,10 orange forms can't be fit exactly on any number of pages.Because, 3 orange forms can be fit exactly on a page. In 10 orange forms, 9 forms can be fit exactly on 3 pages and 1 form will be remaining.To get the number of forms in orange and green which can be fit exactly on some number of pages, we have to find the least common multiple of (3, 5).LCM (3, 5) = 1515 orange forms can be fit exactly on 5 pages at 3 forms/page.15 green forms can be fit exactly on 3 pages at 5 forms/page.Hence, the smallest number of each form could be printed is 15.Problem 6 :In two numbers, one number is a multiple of 6 and the other one is a multiple of 7. If their LCM is 84, then find the two numbers. Solution : From the given information, the numbers can be assumed as 6x and 7x. We can find LCM of 6x and 7x using synthetic division as given below. Therefore, LCM of (6x, 7x) is =  $x \cdot 6 \cdot 7 = 42x$ Given : LCM of the two numbers is 84.Then,  $42x = 84$ Divide each side by 42.x = 2Substitute 2 for x in 6x and 7x. $6x = 6 \cdot 2 = 12$  $7x = 7 \cdot 2 = 14$ So, the two numbers are 12 and 14. Apart from the stuff given in this section, if you need any other stuff in math, please use our google custom search here. If you have any feedback about our math content, please mail us : [v4formath@gmail.com](mailto:v4formath@gmail.com)We always appreciate your feedback. You can also visit the following web pages on different stuff in math. WORD PROBLEMSHCF and LCM word problemsWord problems on simple equations Word problems on linear equations Word problems on quadratic equationsAlgebra word problemsWord problems on trainsArea and perimeter word problemsWord problems on direct variation and inverse variation Word problems on unit priceWord problems on unit rate Word problems on comparing ratesConverting customary units word problemsConverting metric units word problemsWord problems on simple interestWord problems on compound interestWord problems on types of angles Complementary and supplementary angles word problemsDouble facts word problemsTrigonometry word problemsPercentage word problems Profit and loss word problems Markup and markdown word problems Decimal word problemsWord problems on fractionsWord problems on mixed fractionsOne step equation word problemsLinear inequalities word problemsRatio and proportion word problemsTime and work word problemsWord problems on sets and venn diagramsWord problems on agesPythagorean theorem word problemsPercent of a number word problemsWord problems on constant speedWord problems on average speed Word problems on sum of the angles of a triangle is 180 degreeOTHER TOPICS Profit and loss shortcutsPercentage shortcutsTimes table shortcutsTime, speed and distance shortcutsRatio and proportion shortcutsDomain and range of rational functionsDomain and range of rational functionsDomain and range of rational functions with holesGraphing rational functionsGraphing rational functions with holesConverting repeating decimals in to fractionsDecimal representation of rational numbersFinding square root using long divisionL.C.M method to solve time and work problemsTranslating the word problems in to algebraic expressionsRemainder when 2 power 256 is divided by 17Remainder when 17 power 23 is divided by 16Sum of all three digit numbers divisible by 6Sum of all three digit numbers divisible by 7Sum of all three digit numbers divisible by 8Sum of all three digit numbers formed using 1, 3, 4Sum of all three four digit numbers formed with non zero digitsSum of all three four digit numbers formed using 0, 1, 2, 3Sum of all three four digit numbers formed using 1, 2, 5, 6 Enjoy this page? 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