

Factor and Match

Find common factors, common multiples, and useful factored sums.

GRADE 6 • 6.NS.B.4

CCSS.Math.Content.6.NS.B.4 "Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12..."

NAME _____

DATE _____

FIND THE CONNECTION

To find a GCF, list the factors of each number and choose the greatest factor they share. To find an LCM, list multiples of each number and choose the least multiple they share. To rewrite a sum, factor out the GCF by dividing each addend by it.

WORKED EXAMPLE

Express $42 + 30$ as a multiple of a sum whose terms have no common factor.

1. Factors shared by 42 and 30 are 1, 2, 3, and 6.
2. The greatest common factor is 6.
3. Divide each addend by 6: $42/6 = 7$ and $30/6 = 5$.
4. Write $42 + 30 = 6(7 + 5)$.

Answer: $6(7 + 5)$

PRACTICE 6 problems

- 1** Find the GCF of 48 and 72.

ANSWER _____

- 2** Find the LCM of 8 and 9.

ANSWER _____

- 3** Express $45 + 60$ as a multiple of a sum whose terms have no common factor.

ANSWER _____

- 4** Find the GCF of 56 and 84.

ANSWER _____

- 5** Express $32 + 40$ as a multiple of a sum whose terms have no common factor.

ANSWER _____

- 6** Find the LCM of 10 and 12.

ANSWER _____

APPLY IT Show your work

- 1** The art club has 64 stickers and 80 keychains for prize packs. They want to make the greatest number of identical packs with no items left over. How many packs can they make, and how many stickers and keychains will be in each pack?

WORK SPACE

ANSWER _____

- 2** Two online game events begin today. One event happens every 7 days, and the other happens every 11 days. In how many days will both events happen on the same day again?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Express $90 + 72$ as a multiple of a sum whose terms have no common factor. Then explain why the number outside the parentheses is the greatest common factor.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Find the GCF of 48 and 72.	24
2	Find the LCM of 8 and 9.	72
3	Express $45 + 60$ as a multiple of a sum whose terms have no common factor.	$15(3 + 4)$
4	Find the GCF of 56 and 84.	28
5	Express $32 + 40$ as a multiple of a sum whose terms have no common factor.	$8(4 + 5)$
6	Find the LCM of 10 and 12.	60

PART 2 • APPLY IT

- 16 packs, with 4 stickers and 5 keychains in each pack.** Find $\text{GCF}(64, 80) = 16$. Divide each item total by 16.
- 77 days** Find $\text{LCM}(7, 11) = 77$, since 7 and 11 have no common factor other than 1.

CHALLENGE

$90 + 72 = 18(5 + 4)$. The factors of 5 and 4 have no common factor other than 1, so 18 is the greatest common factor of 90 and 72.

Accept equivalent factored forms with the addends in either order, such as $15(4 + 3)$. For word problems, accept correct answers that clearly state both the number of groups and the items in each group.