Printable Worksheets from sofatutor.com

What is Factoring?

Factoring

$$12x + 66$$
$$6 \cdot 2x + 6 \cdot 11$$
$$6(2x + 11)$$
$$12x + 66$$

① **Identify the GCF between the pairs of numbers.**

② Recall the steps for factoring an expression.

③ Factor the expressions.

④ Identify the expressions that are factored completely.

⑤ Construct and factor the corresponding expressions.

⑥ Decide how to factor the expressions.

⊕ with lots of tips, answer keys, and detailed answer explanations for all of the problems.
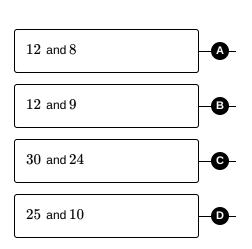
⚠ The complete package, **including all problems, hints, answers, and detailed answer explanations** is available for all sofatutor.com subscribers.
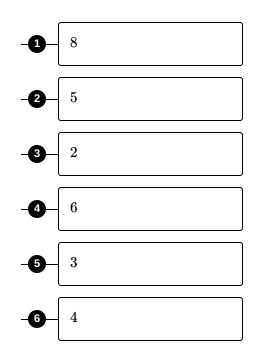
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Worksheet: What is Factoring?
Mathematics / Middle School / Expressions and Equations / Expanding, Factoring, and Distributing Expressions / What is Factoring?

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Identify the GCF between the pairs of numbers.

Match the elements.

12 and 8	**A**
12 and 9	**B**
30 and 24	**C**
25 and 10	**D**

1 8

2 5

3 2

4 6

5 3

6 4

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Hints for solving these problems

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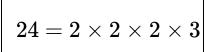## Identify the GCF between the pairs of numbers.

Hint #1

You find the greatest common factor by factoring both numbers.

Hint #2

$$24 = 2 \times 2 \times 2 \times 3$$

Here is the factorization of 24.

Hint #3

Factor both numbers and then check for common factors:

- $24 = 2 \times 2 \times 2 \times 3$
- $16 = 2 \times 2 \times 2 \times 2$

The factors in common are highlighted.

The greatest common factor is the product of the highlighted factors:

$2 \times 2 \times 2 = 8$.

Answers and detailed answer explanations for these problems

① Identify the GCF between the pairs of numbers.
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Answer key: A—6 // B—5 // C—4 // D—2

greatest common factor ?

To find the greatest common factor, you factor the given terms and check for common factors among the terms. If the terms have more than one factor in common, the greatest common factor is the product of those factors.

Let's have a look at a few examples:

12 and 8:

- $12 = 2 \times 2 \times 3$
- $8 = 2 \times 2 \times 2$

Both numbers have two times the factor 2 in common. Thus the greatest common factor is $2 \times 2 = 4$.

12 and 9:

- $12 = 2 \times 2 \times 3$
- $9 = 3 \times 3$

The only factor in common is 3. So, it's the greatest common factor.

30 and 24:

- $30 = 2 \times 3 \times 5$
- $24 = 2 \times 2 \times 2 \times 3$

Both numbers have the factor 2 and 3 in common. Thus the greatest common factor is $2 \times 3 = 6$.

25 and 10:

- $25 = 5 \times 5$
- $10 = 2 \times 5$

The only factor in common is 5 and so, it's the greatest common factor.

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