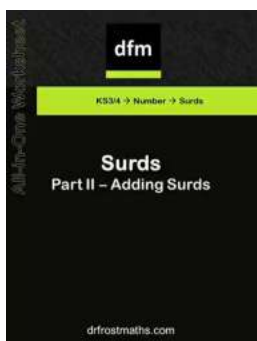# All In One Worksheet Surds Part II: Adding Surds

Welcome back to our series of all-in-one worksheets on surds. If you haven't checked out Part I yet, make sure to do so! In this second installment, we will dive deeper into the world of surds and explore the topic of adding surds. So let's get started!

Understanding Surds

Surds are complex mathematical expressions involving irrational numbers. They are characterized by the presence of a square root ($\sqrt{}$) symbol. Surds can be challenging to work with, but with practice and understanding, you will master them!

Now that we have a basic understanding of surds, let's move on to adding them.

All in One Worksheet - Surds - Part II - Adding Surds by Andrew Adamatzky(Kindle Edition)

★★★★☆ 4.1 out of 5

Language	: English
File size	: 346 KB
Print length	: 296 pages
Screen Reader	: Supported
X-Ray for textbooks	: Enabled

Adding Surds

Adding and subtracting surds involve combining like terms. To add or subtract surds, we need to simplify the expressions by combining the surds with the same value inside the square root. Let's look at some examples:

1. Example 1:

Surds: Addition/Subtraction

$$7\sqrt{20} + 4\sqrt{45}$$

answer in the form $a\sqrt{b}$
nd b are integers to found.

$$7\left(\sqrt{4} \times \sqrt{5}\right) + 4\left(\sqrt{9} \times \sqrt{5}\right)$$

$$2\left(2\sqrt{5}\right) + 4\left(3\sqrt{5}\right)$$

$$14\sqrt{5} + 12\sqrt{5}$$

$$=$$

In this example, we have two surds with the same value inside the square root - 3√2. We can add them together to simplify the expression.

Result: 4√2

2. Example 2:

Surds: Addition/Subtraction

$$7\sqrt{20} + 4\sqrt{45}$$

answer in the form $a\sqrt{b}$

.nd b are integers to found.

$$7\left(\sqrt{4} \times \sqrt{5}\right) + 4\left(\sqrt{9} \times \sqrt{5}\right)$$

$$2\left(2\sqrt{5}\right) + 4\left(3\sqrt{5}\right)$$

$$14\sqrt{5} + 12\sqrt{5}$$

$$=$$

Here, we have two different surds - 2√5 and 3√7. Since these surds cannot be combined because they have different values inside the square root, the expression remains the same.

Result: 2√5 + 3√7

3. Example 3:

Surds: Addition/Subtraction

$$7\sqrt{20} + 4\sqrt{45}$$

answer in the form $a\sqrt{b}$
.nd b are integers to found.

$7(\sqrt{4} \times \sqrt{5}) + 4(\sqrt{9} \times \sqrt{5})$

$2(2\sqrt{5}) + 4(3\sqrt{5})$

$14\sqrt{5} + 12\sqrt{5}$

$=$

In this example, we have two surds with the same value inside the square root, but different coefficients - 2√3 and -7√3. We combine them by adding their coefficients.

Result: -5√3

By using these examples as a starting point, practice adding surds with various values and coefficients. The more you practice, the more comfortable you will become with this operation.

Why is Adding Surds Important?

While adding surds may seem like a difficult task at first, it is an essential skill in various branches of mathematics. Surds often appear in algebraic equations, geometry problems, and calculus. Mastering the art of adding surds will not only improve your problem-solving abilities but also enhance your overall mathematical understanding.
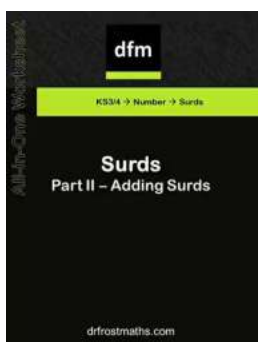
All In One Worksheet Surds Part II - Adding Surds

To help you practice adding surds, we have created an all-in-one worksheet. Click the link below to download the worksheet and continue your surds journey!

Worked Example	Your Turn
$2\sqrt{5} + 5\sqrt{5}$	$2\sqrt{6} + 5\sqrt{6}$
$2\sqrt{20} + 5\sqrt{5}$	$2\sqrt{54} + 5\sqrt{6}$
$2\sqrt{20} + 5\sqrt{10}$	$2\sqrt{20} + 5\sqrt{15}$

Remember, practice makes perfect! Keep exploring the world of surds and embrace the beauty of mathematics. Stay tuned for our next installment in the all-in-one worksheet series!

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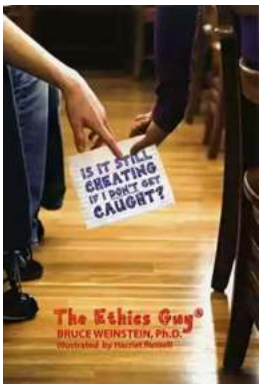|	
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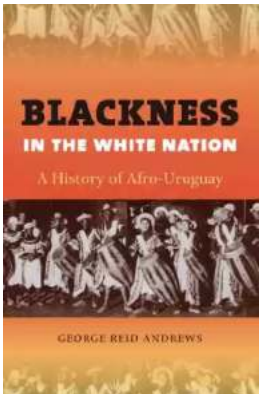
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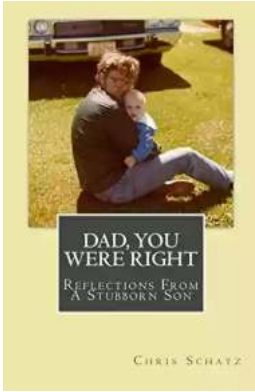
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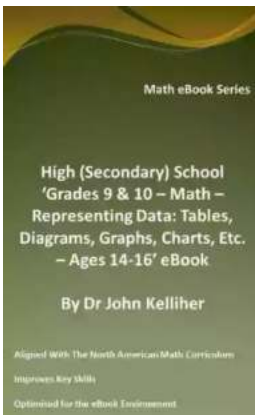
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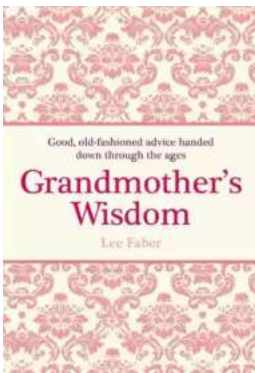
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