Rearranging formulas and equations

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A sample from this topic. The complete topic collection contains three different resources and worked solutions.

Read the explanation and worked example. Show your working; use a calculator only where asked.

What you will practise

• Make a chosen variable the subject and solve formula-based problems.

• Explain a method and check the reasonableness of a result.

Useful starting skills: Use the prerequisite operations and representations shown in the worked example.

Rearranging a formula uses the same balanced operations as solving an equation, but preserves other letters as quantities. Identify all occurrences of the target variable.

If the target appears in several terms, collect and factor it before dividing. State any required non-zero denominators.

Worked example

Make h the subject of $A=(a+b)h/2$.

Multiply by 2:$2A=(a+b)h$.

Divide by $a+b$, assuming $a+b\neq0$.

Answer: $h=2A/(a+b)$

Try it yourself

Name: _____ Date: _____

1. Make w the subject of $P=2l+2w$.

2. Make t the subject of $v=u+at$, $a\neq 0$.

Answers and explanations

Check the method as well as the final answer. An alternative correct method is also valid.

1. $w=P/2-l$

Subtract $2l$ and divide 2.

2. $t=(v-u)/a$

Subtract u and divide a.

Curriculum reference: VC2M10A05; VC2M10A07

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