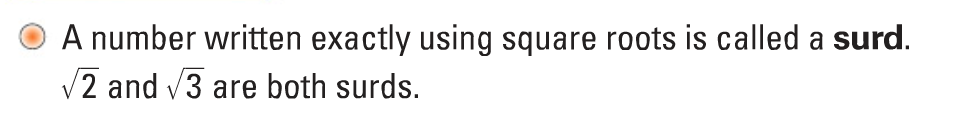
A Level Transition Lessons from GCSE:

Surds

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| --- |
| Contents |
| 02. Introduction to Surds & Multiplying  <https://www.youtube.com/watch?v=6B5VIjONJPM>  Slide 5, 128 can be split in 64 x 2  Slide 10 – second question on the left (). Answer should be 2  Q7 last slide. Answer should be 60 root 10. |
| 03: Further Calculations with Surds  https://www.youtube.com/watch?v=O4X\_H8UAw6w |
| 04. Brackets  https://www.youtube.com/watch?v=JzyAN7v1dyA |
| 05. Rationalising  https://www.youtube.com/watch?v=Njbo9\_rZRxM |
| 06. Harder Rationalising  https://www.youtube.com/watch?v=1uFBuv1QjtQ |

02: Introduction to SURDS & Multiplying





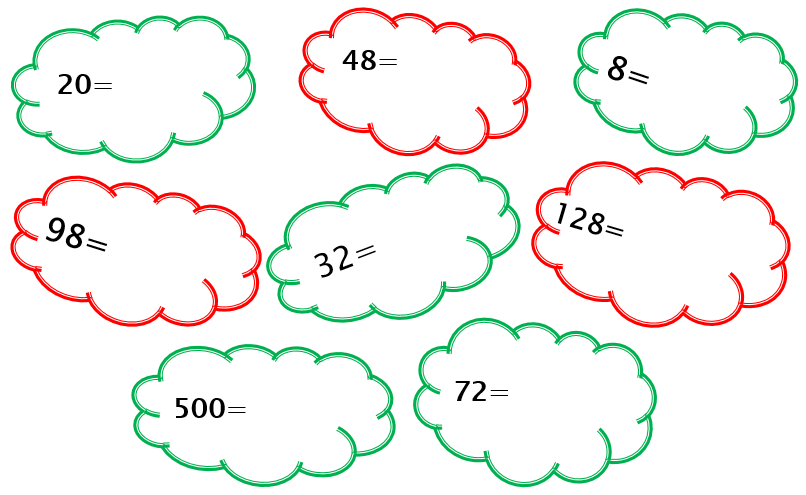
Square Numbers 1-15

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Get the skills…

Break down these numbers into the form

|  |  |  |
| --- | --- | --- |
| 200 | 32 | 75 |

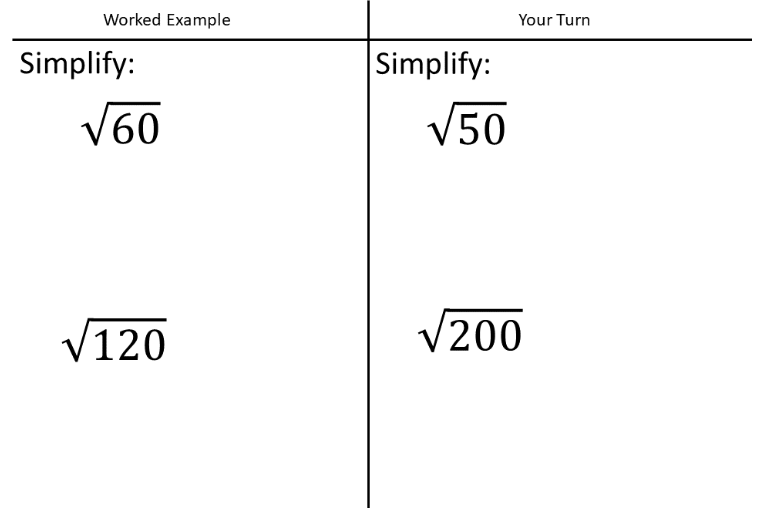


\*\*\*A surd is simplified by having the lowest number possible under the square root.\*\*\*



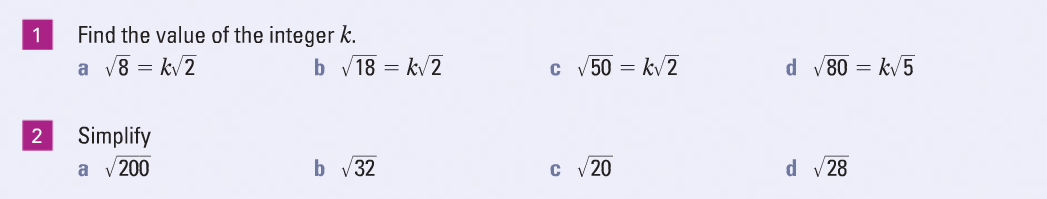
Simplifying Surds

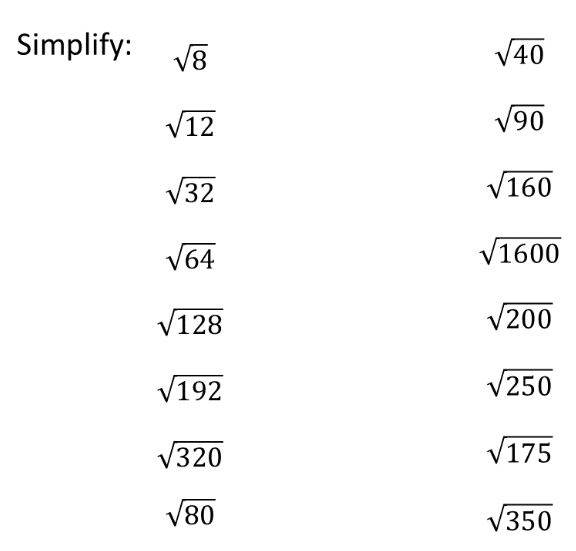
Example:

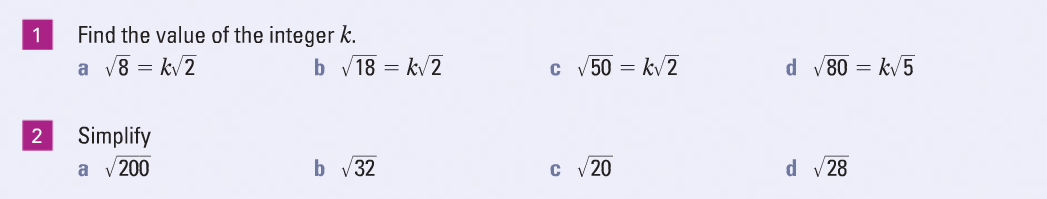


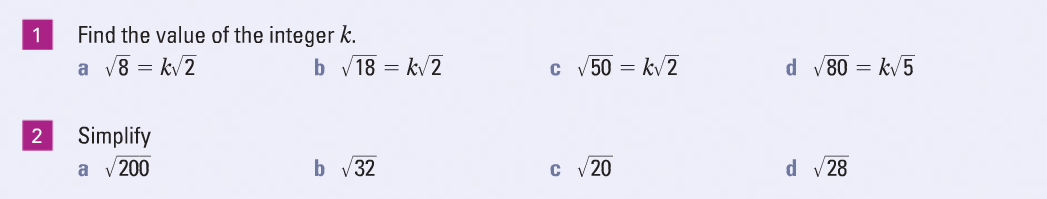
Sometimes it is easier to break it down in steps…

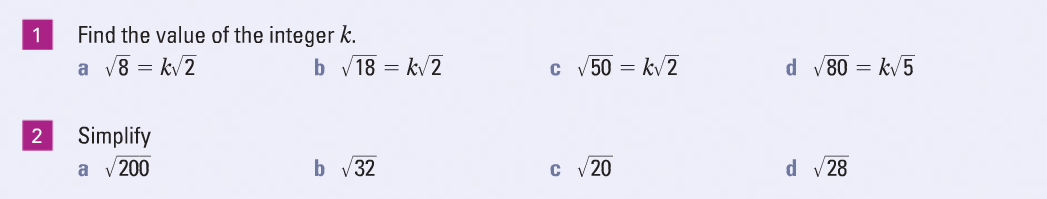
Example:

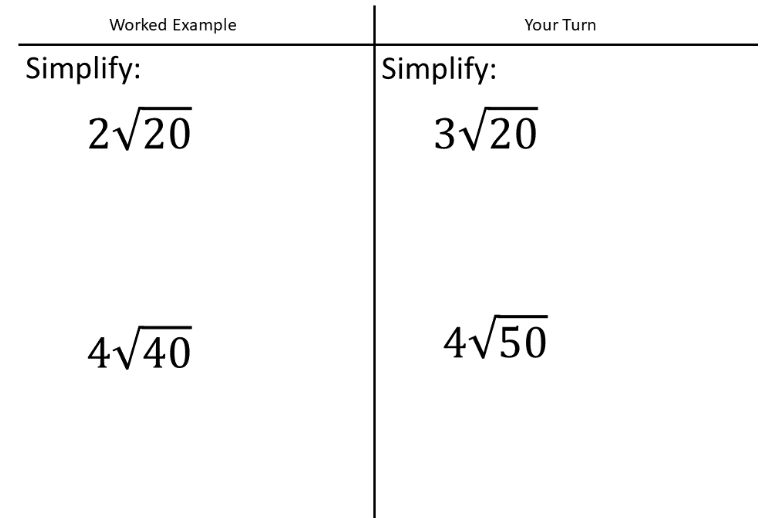


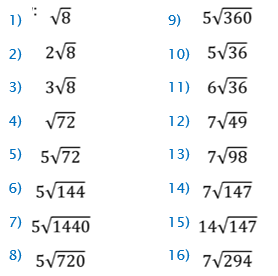












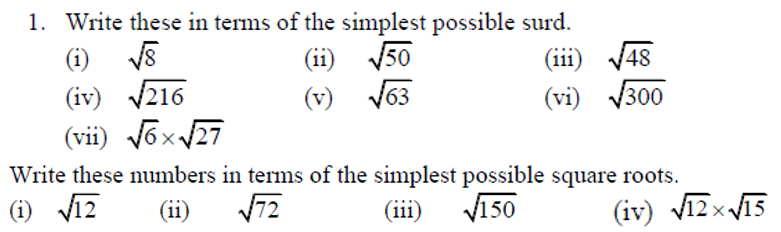
Find the value of integer

a b

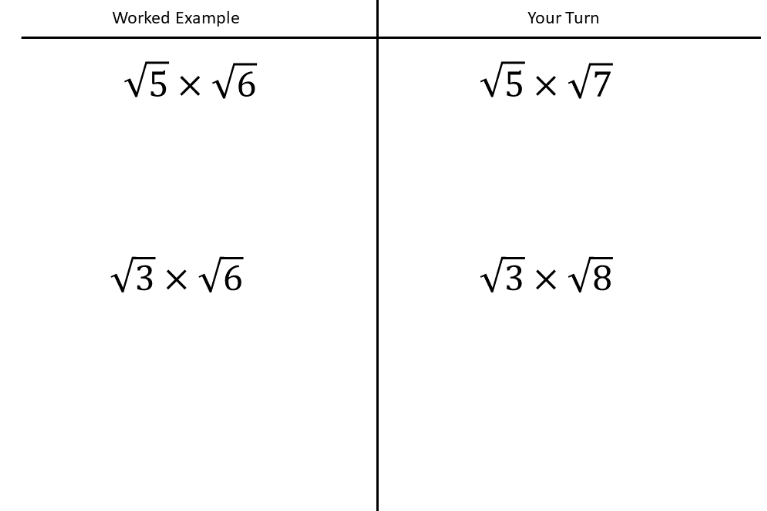
c d

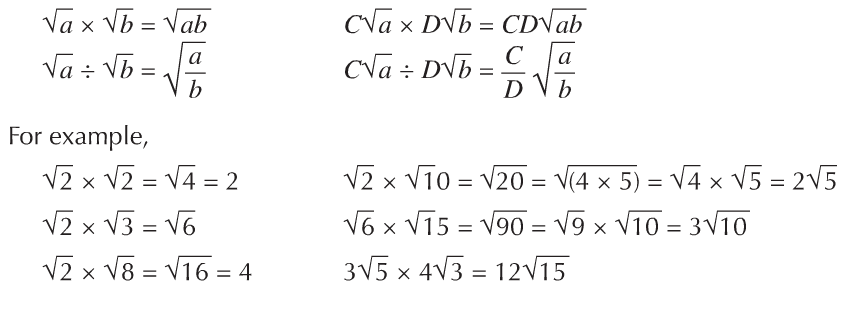
e Solve the equation

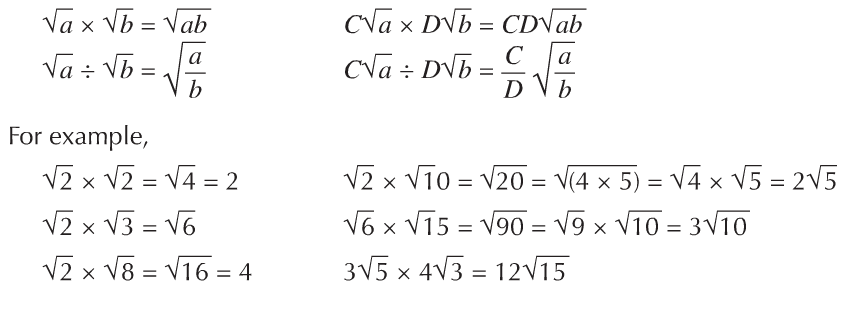
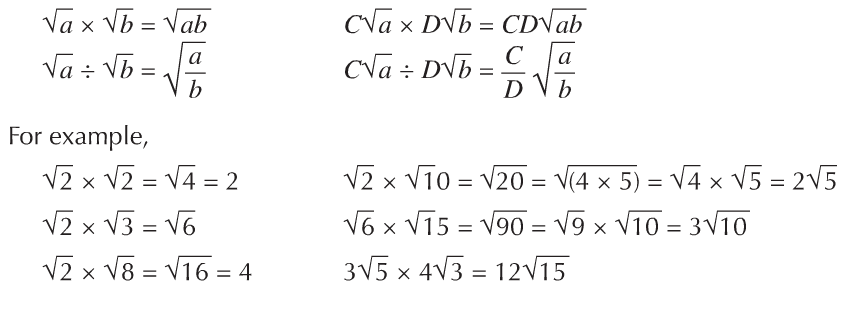
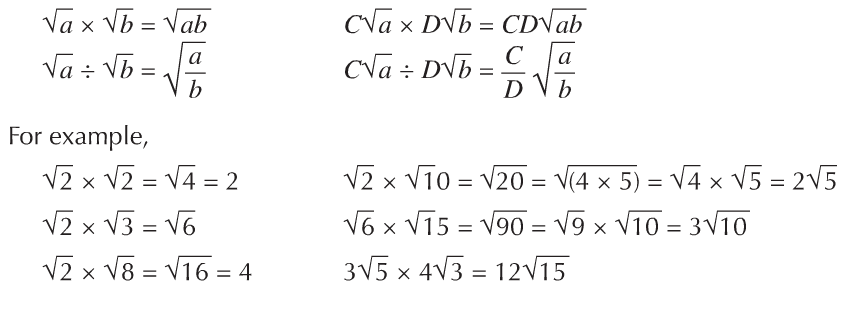
03: Further Calculations with Surds









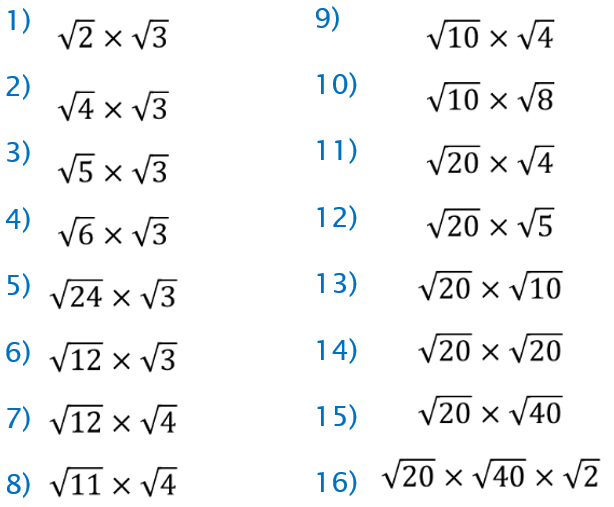


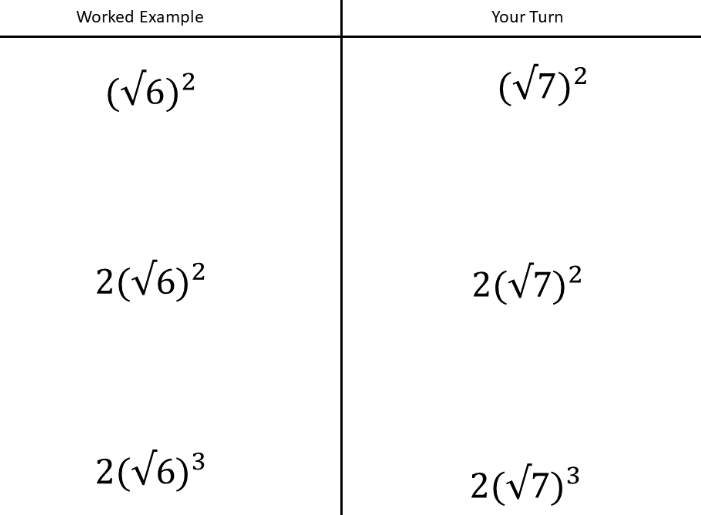
What do you notice?

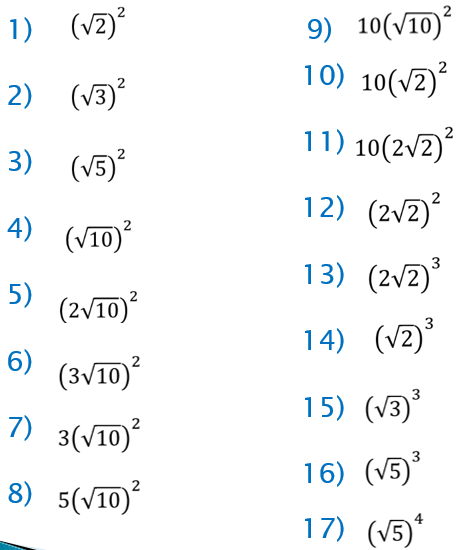
1. 2) 3)

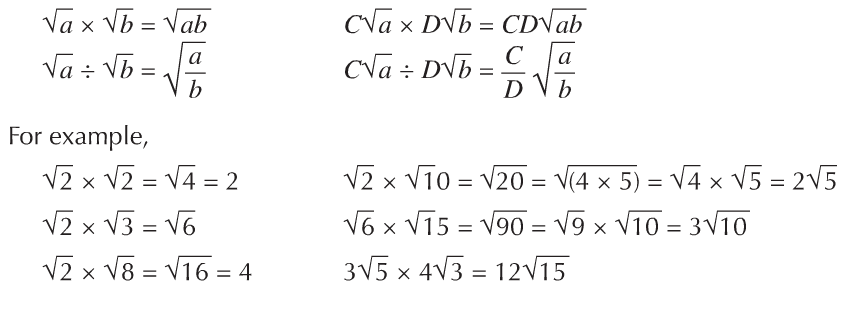
Simplify:

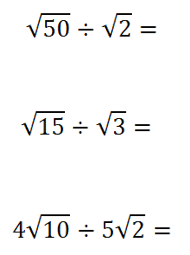
|  |  |
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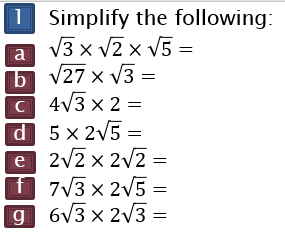


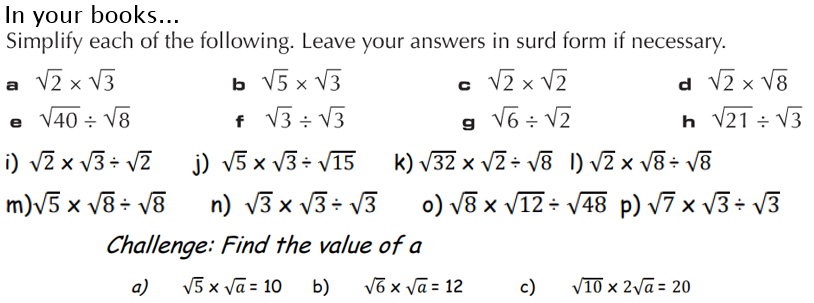










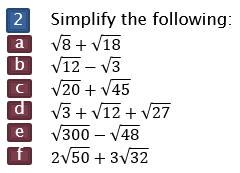


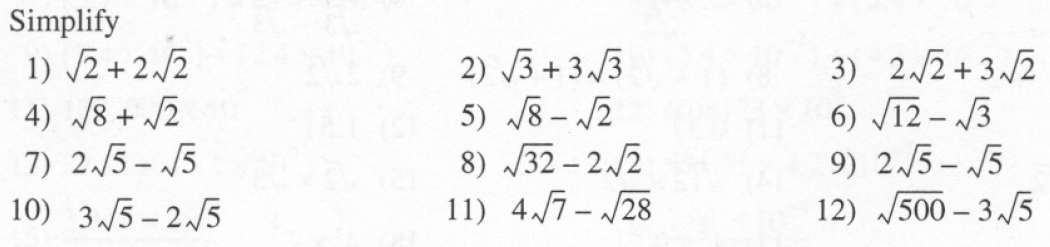
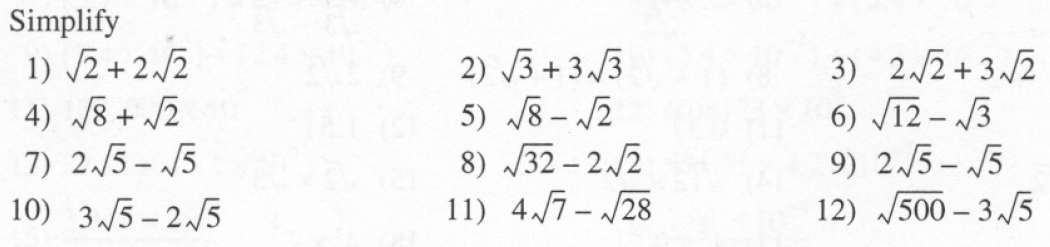
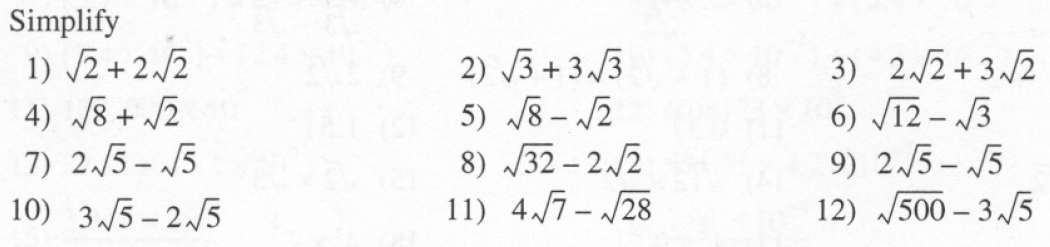
Adding & Subtracting

Treat them the same as algebraic terms…

Eg.

|  |  |
| --- | --- |
| Find the integer | Find the integer |
|  |  |





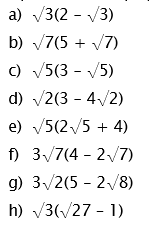
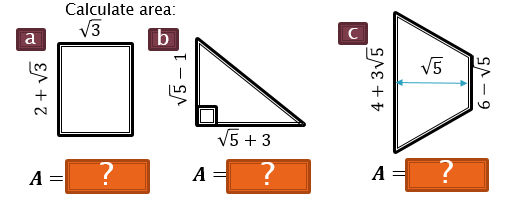
04: Brackets

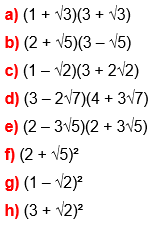
|  |  |  |
| --- | --- | --- |
| Expand and simplify the following expression: | Example 2:  Expand and simplify the following expression: | Expand and simplify the following expression: |
| Screen Clipping | Screen Clipping | Screen Clipping |

Harder Examples

|  |  |
| --- | --- |
| 1) | 2) |

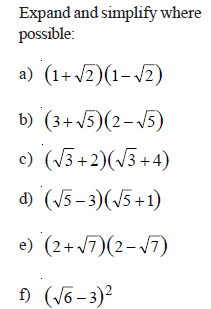
|  |
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Task 1: Task 2: Extension:

Challenge:

05: Rationalising

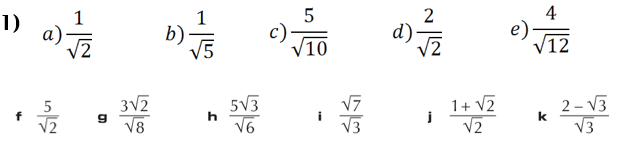
Starter:  
1) Change to a fraction:

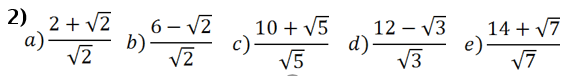
2)

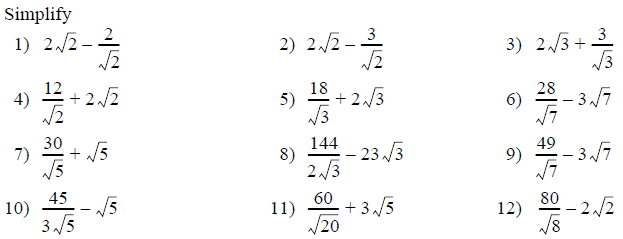
* A simplified surd should have no surds in the denominator of a fraction.
* Eg. The following surds are not in their simplest form ,
* When we simplify a fraction which contains a surd in the denominator we call the process ‘Rationalising the Denominator’.

Examples:

|  |  |  |
| --- | --- | --- |
| 1) Rationalise | 2) Simplify | 3) Simplify |
| 4) Simplify Give your answer in the form | 5) | 6) |





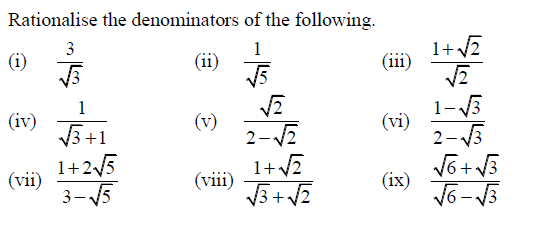
**3)**

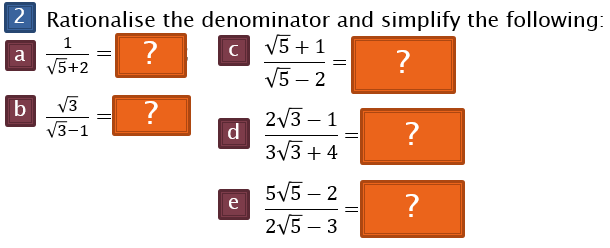
06: Harder Rationalising

|  |  |  |
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Killer Questions

|  |  |
| --- | --- |
|  |  |

1)



Extension

