Activity 10

Title:
Surd Domino Chain

Type:
Comparing Multiple Representations

Why you might use this activity:

- to develop deeper learning of the manipulation of surds;
- to explore properties of surds;
- to review and consolidate surds.

How you might use this activity:

Learners:

- should begin with the 'Start' domino and then add dominoes so that the matching expressions are equivalent;
- could play as a structured activity where learners take it in turns to add one domino, or in pairs and groups trying to complete the whole chain in their own way.

Meeting the needs of all learners:

Learners could:

- continue the domino chain by keeping back the one with 'Finish' on and giving out blank dominoes;
- make up domino activities of their own.

Reviewing the learning from this activity:

Learners could:

- write up, with explanation, the pairs that they found most difficult to match.

What Learners might do next:

- solve a range of problems that require the manipulation of surds such as solving quadratic equations in exact form, integrating with surd limits and finding distances between points using Pythagoras' theorem.

Further ideas for this type of activity:

- algebraic indices;
- differentiation and integration;
- brackets at all levels;
- simple calculations at levels 1 and 2;
- simple algebra at level 2.

Activity 10 Surd Domino Chain

$\frac{2\sqrt{3}}{3}$	$\sqrt{18}+3\sqrt{2}$	$3\sqrt{2}$	$\sqrt{90}$
$\sqrt{80}$	$\frac{1}{\sqrt{5}-\sqrt{3}}$	$6\sqrt{2}$	$2\sqrt{3}\times 5\sqrt{3}$
$\frac{\sqrt{5}-\sqrt{3}}{2}$	$\frac{\sqrt{72}}{\sqrt{3}}$	$12\sqrt{6}$	$\sqrt{40}\times\sqrt{90}$
$3\sqrt{10}$	$\frac{\sqrt{54}}{\sqrt{6}}$	60	$\frac{3}{\sqrt{3}}$
$\sqrt{2}$	$\frac{1}{\sqrt{5}+\sqrt{3}}$	$2\sqrt{6}$	$\sqrt{8}+\sqrt{2}$
9	$\frac{8+\sqrt{48}}{4}$	$5+2\sqrt{6}$	$(\sqrt{3})^4$

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$\sqrt{3}$	$\frac{6}{\sqrt{3}}$	3	$\sqrt{120}$
$\sqrt{8}$	$\frac{2}{\sqrt{3}}$	20	$\sqrt{10}\times\sqrt{8}$
$\frac{\sqrt{5}+\sqrt{3}}{2}$	$\frac{\sqrt{50}}{5}$	$2\sqrt{30}$	$2\sqrt{5}\times 4\sqrt{5}$
$2+\sqrt{3}$	$3\sqrt{2}\times 4\sqrt{3}$	$\sqrt{21}$	$(\sqrt{3}+\sqrt{2})^2$
30	$\sqrt{8}\times\sqrt{50}$	$2\sqrt{3}$	Finish
40	$\frac{\sqrt{84}}{2}$	Start	$2\sqrt{2}$

Activity 10 Domino chain