A Level Mathematics

Chapter 1

Algebraic Expressions

Chapter Overview

1. Basic Index Laws

2. Negative/ Fractional Indices

3. Factorise Quadratics and Cubics

4. Expanding Brackets

5. Surds



Basic Index Laws

Examples

1. Simplify

2. Simplify

3. Simplify

4. Simplify ( 2 methods)

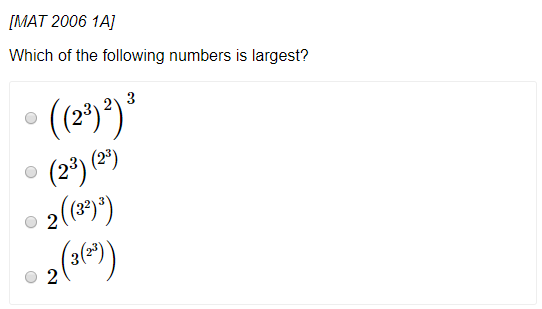
Test Your Understanding:

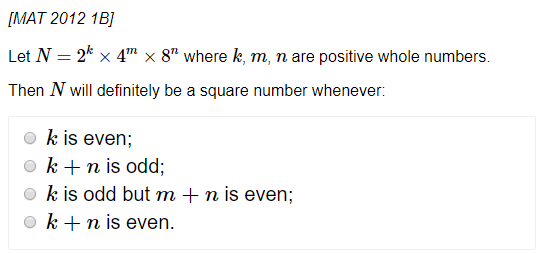
1. Simplify 2. Simplify

3.Expand and simplify

4.Simplify

Extension





Exercise 1A Page 3

Negative and Fractional Indices

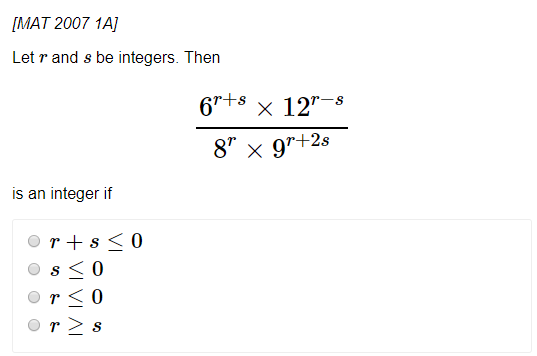
1. Prove that 2. Evaluate

1. Evaluate 4. Simplify

5. Evaluate

6. If , determine in the form where are constants

Extension



Exercise 1D Page 11

Brackets: Expanding

Example:

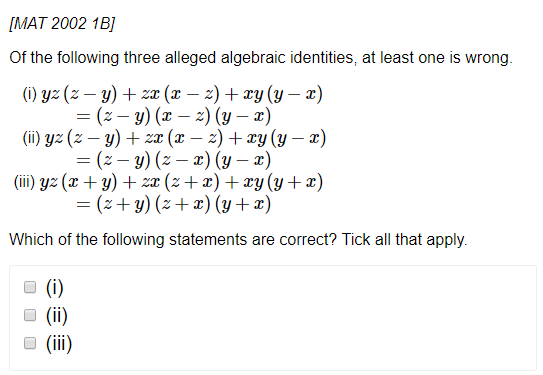
Questions

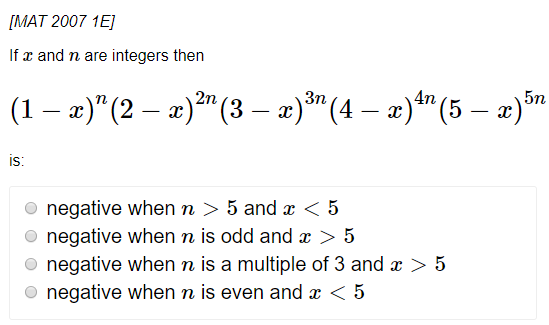
1. Expand and simplify

2. Expand and simplify:

3. Expand and simplify:

Extension





Brackets: Factorising

Examples:

1. 2.

3. 4.

5.

Test your understanding: Factorise completely

1. 2.

3. 4.

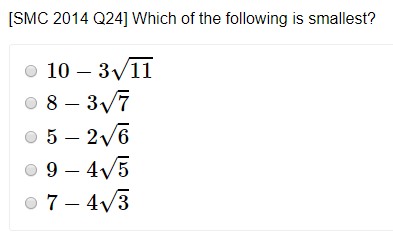
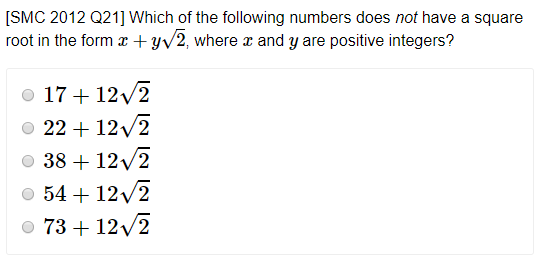
Exercise 1C Page 8

Surds:

1.

3.

5.

Extension:

Exercise 1E Page 11

Rationalising the denominator:

Examples:

3. 4.

Test your understanding:

More Complicated Examples:

1. 2.

3.

Test Your Understanding: Rationalise the denominator and simplify

1.

2.

3. Solve

Give your answer in the form where and are integers.

Exercise 1F Page 15