

## What I Need To Know

### Chapter 2 – Absolute Value and Radical

Demonstrate an understanding of the absolute value of real numbers.

- Determine the distance of two real numbers from 0 on a number line, and relate this to the absolute value.
- Determine the absolute value of a positive or negative real number.
- Explain, using examples, how distance between two points on a number line can be expressed in terms of absolute value.
- Determine the absolute value of a numerical expression.
- Compare and order the absolute values of real numbers in a given set.

Solve problems that involve operations on radicals and radical expressions with numerical and variable radicands.

- Compare and order radical expressions with numerical radicands in a given set.
- Express an entire radical with a numerical radicand as a mixed radical.
- Express a mixed radical with a numerical radicand as an entire radical.
- Perform one or more operations to simplify radical expressions with numerical or variable radicands.
- Rationalize the denominator of a rational expression with monomial or binomial denominators.
- Describe the relationship between rationalizing a binomial denominator of a rational expression and the product of the factors of a difference of squares expression.
- Explain, using examples, that  $(-x)^2 = x^2$ ,  $\sqrt{x^2} = |x|$ , *e.g.*  $\sqrt{9} \neq \pm 3$
- Identify the values of the variable for which a given radical expression is defined.
- Solve a problem that involves radical expressions.

Solve problems that involve radical equations (limited to square roots).

- Determine any restrictions on values for the variable in a radical equation.
- Determine the roots of a radical equation algebraically, and explain the process used to solve the equation.
- Verify, by substitution, that the values determined in solving a radical equation algebraically are roots of the equation.
- Explain why some roots determined in solving a radical equation algebraically are extraneous.
- Solve problems by modelling a situation using a radical equation.