

Exponents and radicals

Remember: A square root of a number is another number which, when used as a factor twice, equals the original number.

Remember: When multiplying with same bases with exponents, add the exponents on the same base. When dividing with exponents, subtract the exponent of the divisor from the exponent of the dividend. When raising an exponential to a power, multiply the exponents.

A square root is the same as the $\frac{1}{2}$ power. A cube root is the same as the $\frac{1}{3}$ power.

I expect radicals to be simplified, and exponents to be positive, unless otherwise stated.

Complex Numbers

In mathematics, we use the symbol i to represent the positive square root of -1 . (notation first used by Leonard Euler). Thus $i = \sqrt{-1}$; $i^2 = -1$; $i^3 = -i$; $i^4 = +1$.

The standard form of a complex number is $a + bi$, where a is the real number part and bi is the imaginary part.

Areas of similar geometric figures

The ratio of the areas of similar two-dimensional geometric figures equals the square of the ratio of the sides (or any other linear measure). (This book calls the ratio