

**Substitution:**

Example 1: Solve the following equations involving exponents.

a) The volume of a sphere is given by the formula  $V = \frac{4}{3}\pi r^3$

Calculate the volume when  $r = 3$  cm.

b) Given the equation  $h = (t - 5)^3 - t^2 + 3(t-1) - 2$  solve for  $h$  when:

i)  $t = 3$

ii)  $t = 5.5$

**Modelling with Algebraic Expressions****Example 2**

Peanuts sell at \$5/kg and almonds sell at \$20/kg.

a) Write an expression that would represent the cost of a mixture of peanuts and almonds. **\*\*Remember your 'let' statements; include units!\*\***

b) What would the cost of the mixture be if there is 1 kg of peanuts and 0.4 kg of almonds.

**Example 3**

The Kitchener Auditorium charges \$30 for blue seats, \$20 for gold seats and \$10 for red seats.

a) Write an expression that describes the total earnings from seat sales. **\*\*remember your 'let' statements\*\***



b) How much will the arena earn if it sells 60 blue seats, 250 gold seats and 325 red seats?