OUR OWN ENGLISH HIGH SCHOOL, SHARJAH
A GEMS SCHOOL

MATHS WORKSHEET

GRADE 7

ALGEBRAIC EXPRESSIONS

1) Get the algebraic expression in the following cases using variables.
   1. The number *y* multiplied by half of itself.
   2. The numbers *x* and *y* both squared and added.
   3. Sum of numbers *a* and *b* subtracted from twice of *a*.
   4. Five more than *x* added to twice of *x*.
2) Write the coefficients of:
   1. *y* in *½xy.*
   2. Y^2 in $2xy^2z$.
   3. *x* in $2x + xy - 3xz$.
3) Add the following algebraic expressions:
   1. $4p + 6q + 3p + 2q$
   2. $4p^2 - 5q^2 + 7q^2 - 3p^2$
4) Add $2x^2 - 3x + 1$ to the sum of $3x^2 - 2x$ and $3x + 7$.
5) What should be added to a^2+3ab to obtain $5ab +6a^2$.
6) Add $a^3 + b^3 - 3$ to the sum of $2a^3 - 3b^3 - 3ab + 7$ and $-a^3 + b^3 + 3ab - 9$.

7) If a = 1, b = 1, c = 2, find the value of
   1. $a^2 + b^2 + c^2 – ab – bc – ca$
   2. $a^3 + b^3 + c^3 – 3abc$
8) If $p = 7x^2 + 5xy – 9y^2$, $q = 4y^2 – 3x^2 – 6xy$ and $r = -4x^2 + xy + 5y^2$, show that p + q + r = 0.
9) If $P = a^2-b^2 +2ab$, $Q=a^2+4b^2-6ab$, $R=b^2+b-4ab$ and $T=-2a^2+b^2-ab+a$. Find P+Q+R+S-T.
10) The perimeter of a triangle is $7a^2 +13a+8$ and two of its sides are $2a^2+3a^2+2$ and $3a^2 – 4a – 1$. Find the third side of the triangle.
11) The salary of Sarah is Rs. (4x+3y) if she spends Rs.(3x+y) ,find her savings.
12) The shopkeeper sale for October was Rs.(x^2+3x+7) if the cost price of goods solved was Rs.7x + 12 find the profit made by the shopkeeper.