WORKSHEET

Module 1

CHAPTER12. ALGEBRAIC EXPRESSIONS

1. Identify, in the following expressions, terms which are not constants. Give their numerical coefficients: $xy + 4$, $13 - y^2$, $13 - y + 5y^2$, $4p^2q - 3pq^2 + 5$

2. (a) What are the coefficients of x in the following expressions? $4x - 3y$, $8 - x + y$, $y^2x - y$, $2z - 5xz$

(b) What are the coefficients of y in the following expressions? $4x - 3y$, $8 + yz$, $yz^2 + 5$, $my + m$

3. Classify the following expressions as a monomial, a binomial or a trinomial: a, $a + b$, $ab + a + b$, $ab + a + b - 5$, xy, $xy + 5$, $5x^2 - x + 2$, $4pq - 3q + 5p$, 7, $4m - 7n + 10$, $4mn + 7$.

4. Collect like terms and simplify the expression: $12m^2 - 9m + 5m - 4m^2 - 7m + 10$

5. Add and subtract

(i) $m - n$, $m + n$

(ii) $mn + 5 - 2$, $mn + 3$

6. Subtract $24ab - 10b - 18a$ from $30ab + 12b + 14a$.

7. From the sum of $2y^2 + 3yz$, $-y^2 - yz - z^2$ and $yz + 2z^2$, subtract the sum of $3y^2 - z^2$ and $-y^2 + yz + z^2$.

8. Classify the following polynomials as monomials, binomials, trinomials.

$-z + 5$, $x + y + z$, $y + z + 100$, $ab - ac$, 17

9. Construct

(a) 3 binomials with only *x* as a variable;

(b) 3 binomials with *x* and *y* as variables;

(c) 3 monomials with *x* and *y* as variables;

(d) 2 polynomials with 4 or more terms.

10. Add:

(i). $t - 8tz$, $3tz - z$, $z - t$

(ii). $7mn + 5$, $12mn + 2$, $9mn - 8$, $-2mn - 3$

(iii). $a + b - 3$, $b - a + 3$, $a - b + 3$

(iv). $14x + 10y - 12xy - 13$, $18 - 7x - 10y + 8xy$, $4xy$

(v). $5m - 7n$, $3n - 4m + 2$, $2m - 3mn - 5$

11. Add: $7xy + 5yz - 3zx$, $4yz + 9zx - 4y$, $-3xz + 5x - 2xy$.

12. Subtract $5x^2 - 4y^2 + 6y - 3$ from $7x^2 - 4xy + 8y^2 + 5x - 3y$.

13. Subtract $4a - 7ab + 3b + 12$ from $12a - 9ab + 5b - 3$.

14. Subtract $3xy + 5yz - 7zx$ from $5xy - 2yz - 2zx + 10xyz$.

15. Subtract $4p^2q - 3pq + 5pq^2 - 8p + 7q - 10$ from $18 - 3p - 11q + 5pq - 2pq^2 + 5p^2q$.

16. (a) What should be added to $x^2 + xy + y^2$ to obtain $2x^2 + 3xy$?
(b) What should be subtracted from $2a + 8b + 10$ to get $-3a + 7b + 16$?

17. What should be taken away from $3x^2 - 4y^2 + 5xy + 20$ to obtain $-x^2 - y^2 + 6xy + 20$?

18. (a) From the sum of $3x - y + 11$ and $-y - 11$, subtract $3x - y - 11$.
(b) From the sum of $4 + 3x$ and $5 - 4x + 2x^2$, subtract the sum of $3x^2 - 5x$ and $-x^2 + 2x + 5$.
