

Riviera International Academy

Assignment-2077

(Shrawan 12, 2077, Monday)

Class: Nine

Subject- Science

1. The valency of sodium is one, why?
2. Write the electronic configuration of sodium and chlorine on the basis of sub-shell.
Also identify their group and period in modern periodic table.
3. Which bond should be stronger between C – C and C = C? Why?
4. What is polar and non- polar covalent bond? Write with two examples.

Subject- HPE

A. Short answer questions.

1. Explain the basic needs approach as one of the important bases for the measurement of quality of life.
2. Why is human resource called as an important aspect of development? Explain with justification.
3. Which aspects are incorporated in the concept of development?
4. Explain the relationship among population, development and environment.

Subject- Computer

State whether the following statements are true or false.

- a. You can input commands by selecting graphical symbols in GUI operating system.
- b. When you turn on the computer Windows XP is loaded automatically in the computer.
- c. Every Desktop may look a little different.
- d. The Desktop is a useful program that displays the contents of a computer.
- e. My Document, My Computer and Recycled Bin are useful programs.
- f. A file is a data, information or programs stored in a storage disk with a name.
- g. You cannot move file from one location to another location.
- h. A folder is a table of contents which does not occupy space.
- i. Path should lead from the starting point to the filename.

Fill in the blanks.

- a. The users don't require to remember commands and key combinations to perform tasks inbased operating system.
- b. Floppy disks are identified byand alphabets.
- c.is a useful program that displays the contents of a computer.
- d. The collection of information stored in a disk with a unique name is
- e. The folders inside another folder are known as

Subject – Mathematics

Source: Photo of exercise are given below

Work: Complete 6.1

Do your work neatly

Factors and Factorisation - Review

In the given figure, x unit is the length of a square.

So, the area of the square = x^2 sq. unit.

Let, the length of the square is increased by 2 units.

Then, the length of the rectangle = $(x + 2)$ units.

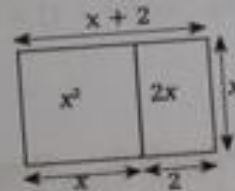
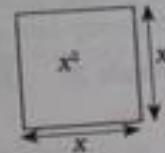
Now, the area of the rectangle = $x \times (x + 2)$ sq. units
= $(x^2 + 2x)$ sq. units

Here, $x^2 + 2x$ is the product of x and $(x + 2)$.

Therefore, x and $(x + 2)$ are the factors of the expression $x^2 + 2x$.

Thus, factorisation is the process of expressing a polynomial as the product of two or more polynomials.

When we factorise an expression, we write it as the product of its factors. The process of getting the factors becomes easier if we apply the selected method of factorisation for the particular type of expression. So, it is important and very much useful to know about the types of expressions which are to be factorised.



i) Expression having a common factor in each of its term

Let's take an expression $ax + ay$. Here, both terms contain a common term which a . In such an expression, the factor which is present in all terms of the expression is taken out as common and each term of the expression should be divided by the common factor to get another factor.

Worked-out examples

- Example 1: Factorise**
- (i) $4ab + 6ac$
 - (ii) $2x^2y - 4xy^2 + 6xy$
 - (iii) $2a(x - y) + 7b(y - x)$
 - (iv) $3p^2q(a - b) - 6pq^2(b - a)$

Solution:

- (i) $4ab + 6ac$
= $2a(2b + 3c)$
- (ii) $2x^2y - 4xy^2 + 6xy$
= $2xy(x - 2y + 3)$
- (iii) $2a(x - y) + 7b(y - x)$
= $2a(x - y) - 7b(x - y)$
= $(x - y)(2a - 7b)$
- (iv) $3p^2q(a - b) - 6pq^2(b - a)$
= $3p^2q(a - b) + 6pq^2(a - b)$
= $3pq(a - b)(p + 2q)$

(ii) Expression having common factors in the groups of terms

Let's take an express $ax + by - ay - bx$. It can be regroup as $ax - ay - bx + by$ (or $ax - bx - ay + by$). In $ax - ay - bx + by$, the group $ax - ay$ has the common factor a and the group $-bx + by$ has the common factor b . Then,

$$ax - ay - bx + by = a(x - y) - b(x - y) = (x - y)(a - b)$$

$$\text{Similarly, } ax - bx - ay + by = x(a - b) - y(a - b) = (a - b)(x - y)$$

In this way, in such expressions, the terms are to be arranged in suitable groups such that each group has a common factor.

Example 2: Factorise (i) $x^2 - ax + ab - bx$ (ii) $ac(b^2 + 1) + b(a^2 + c^2)$

Solution:

$$(i) \quad x^2 - ax + ab - bx = x^2 - ax - bx + ab = x(x - a) - b(x - a) = (x - a)(x - b)$$

$$(ii) \quad ac(b^2 + 1) + b(a^2 + c^2) = ab^2c + ac + a^2b + bc^2 \\ = ab^2c + a^2b + bc^2 + ac \\ = ab(bc + a) + c(bc + a) = (bc + a)(ab + c)$$

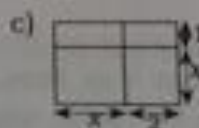
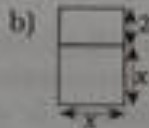
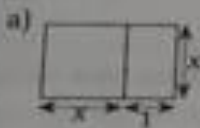
Example 3: Simplify $\frac{2x^2 - 6x}{x^2 + 2x - 3x - 6}$

Solution:

$$\frac{2x^2 - 6x}{x^2 + 2x - 3x - 6} = \frac{2x(x - 3)}{x(x + 2) - 3(x + 2)} = \frac{2x(x - 3)}{[x + 2](x - 3)} = \frac{2x}{x + 2}$$

EXERCISE 6.1**General section**

1. In each of the following figures, write the polynomial as the product of it's factors.

**Creative section**

2. Factorise

a) $2ax + 4bx$

b) $4p^2 - 6p$

c) $6a^2b + 9ab^2$

d) $2px^2 - 4px + 6p^2x$

e) $6x^2y^2 + 9x^2y^2 - 3x^2y^2$

f) $2x(a + b) + 3y(a + b)$

g) $3a(x - y) - (x - y)$

h) $x(x + 2) + 3x + 6$

i) $2t(t - 1) - t + 1$

3. Resolve into factors.

a) $ax + by + ay + bx$

b) $pm - qn + pn - qm$

c) $a^2 + ab + ca + bc$

d) $mx^2 + my^2 - nx^2 - ny^2$

e) $xy - 2y + 3x - 6$

f) $x^2 + 4x + 3x + 12$

g) $p^2 - 8p - p + 8$

h) $16x^2 - 4x - 4x + 1$

i) $a^2 - a(b + c) + bc$

j) $x^2 - (y - 3)x - 3y$

k) $pq(r^2 + 1) - r(p^2 + q^2)$

l) $y(x + z) + z(x + y) + y^2 + z^2$

4. Simplify.

a) $\frac{a^2 + a}{2ab + 2b}$

b) $\frac{3x^2 - 6xy}{2xy - 4y^2}$

c) $\frac{6p^2 - 2p}{3p^2 - p + 3p - 1}$

d) $\frac{2x^2 - xy + 2xy - y^2}{6xy - 3y^2}$

e) $\frac{x^2 + 2x + x + 2}{x^2 - 3x + 2x - 6}$

f) $\frac{x^2 - 4x - 3x + 12}{x^2 - 4x + 2x - 8}$