



## Question bank

### Grade 7- Mathematics

#### Chapter 15- Algebraic Expressions

A. Choose the correct option.

1) If  $y = -2$ , the value of  $-2y^2$  is:

- a) 8                                      b) -6                                      c) -8                                      d) 4

2) Which of these is a like term for  $-5x^2y$ ?

- a)  $-5x^2y^2$                                       b)  $4yx^2$                                       c)  $-xy$                                       d)  $5xy^2$

3) If  $-2x^2$  is subtracted from  $2x^2$ , the result will be:

- a)  $4x^2$                                       b)  $-4x^2$                                       c) 0                                      d)  $-2x^2$

4) If  $xy$  is multiplied by  $-1$ , the result is:

- a)  $xy$                                       b)  $x - y$                                       c)  $y - x$                                       d)  $-xy$

5)  $2x^2 + x + y^2 - 2x + x^2 - y - x + y^2 - 3x^2$  when simplified is:

- a)  $2x + 2y^2 - y$                                       b)  $-2x + 2y^2$                                       c)  $-2x - y$                                       d)  $-2x + 2y^2 - y$

B. State whether true or false.

1) Expression  $3x^2 - 4y$  has two terms.

2) A term is made of product of factors.

3)  $x^2y$  has two factors.

4) In  $-xy$ , the numerical coefficient of  $x$  is 1.

5) Product of  $xy$  and  $-y^2$  is  $xy^3$ .

C. Fill in the blanks.

1) Add:

- a)  $-5x$  and  $6x$                                       b)  $2x^2 - 2y$  and  $y^2 + x + y$

2) Subtract:

- a)  $-x + y$  from  $3x + 5y$                                       b)  $-x^2 + x - 2y$  from  $3x^2 - 3x - 4y$

3) Multiply

a)  $3x$  and  $-2xy$

b)  $-2y$  and  $7x^2 y$

4) Evaluate.

a)  $2x + y^2$  given  $x = 1, y = -1$

b)  $-x^2 + x = 2y$  given  $x = 4, y = 1$

#### D. Solve

1) Add  $x - 2y$  and  $-2x - 4y$ , and subtract  $x + y$  from the sum.

2) Subtract  $2x - 3y - z$  from 0.

3) Subtract  $2x - y$  from  $3x - 4y$ , and the result to  $5x + y$ .

4) Multiply  $3xy$  and  $y$ , and subtract the result from  $5xy^2$ .

5) Simplify

a)  $(x + y - z) + (x - y - 2z) - (x + 2y - 3z)$

b)  $\{(-y) \times (2xy)\} - (5xy - 2x)$

#### E. Answer the following questions.

1. What is the area of a square of side  $2xy^2$  units?

2. Find the area of a rectangle with length  $2x^2$  and breadth  $3y$ .

3. A pentagon (5-sided shape) has each side of length  $2x + 2y$ . Find its perimeter.

4. From a rectangle of length  $2x^2$  and breadth  $2y$ , a square of side  $5x$  is cut. Write the expression for the remaining area.

5. A triangle has sides of length  $2x$ ,  $2y$  and  $2z$ . If it is an equilateral triangle, write the relation between  $x$ ,  $y$  and  $z$ . Hence write the perimeter in terms of  $x$ .

6. A right-angled triangle has legs of lengths  $3x$  and  $2y$ . Write the expression for the square of hypotenuse.