



## Sixth Grade - Arithmetic to Algebra

1) Evaluate the following algebraic expressions at the given value(s):  $7x - 4y - 12$  at  $x = 2$  and  $y = -2$

- 8
- 6
- 15
- 10

2) Evaluate the following algebraic expressions at the given value(s):  $3a - 4(a-5)$  at  $a = 4$

- 16
- 33
- 24
- 21

3) Evaluate the following algebraic expressions at the given value(s):  $-5(a - 4b)$  at  $a = 3$  and  $b = -1$

- -3
- -5
- -1
- -9

4) Evaluate the following algebraic expressions at the given value(s):  $x(2x - 4)$  at  $x = -5$

- 65
- 70
- 90
- 45

5) Evaluate the following algebraic expressions at the given value(s):  $x + yz$ , at  $x = 1$ ,  $y = 3$  and  $z = 4$



- 13
- 11
- 16
- 19

6) Evaluate the following algebraic expressions at the given value(s):  $(x + y)z$ , at  $x = 1$ ,  $y = -3$  and  $z = 5$

- -15
- -12
- -10
- -18

7) Evaluate the following algebraic expressions at the given value(s):  $x + 2(y + z)$ , at  $x = -1$ ,  $y = 2$  and  $z = -5$

- -9
- -7
- -8
- -6

8) Evaluate the following algebraic expressions at the given value(s):  $(x + 2)(y + z)$ , at  $x = -5$ ,  $y = -3$  and  $z = 2$

- 5
- 3
- 6
- 8

9) Evaluate the following algebraic expressions at the given value(s):  $x - 3(y - z)$ , at  $x = -3$ ,  $y = 2$  and  $z = -1$

- -11
- -14
- -16



- -12

10) Evaluate the following algebraic expressions at the given value(s):  $(x - 3)(y - z)$ , at  $x = -1$ ,  $y = -3$  and  $z = -4$

- -12
- -4
- -8
- -10

11) Simplify the following expressions in base exponent form:  $3 \times 3 \times 3 \times 3$

- $3^2$
- $3^3$
- $3^4$
- $3^6$

12) Simplify the following expressions in base exponent form:  $(-3) \times (-3) \times (-3) \times (-3) \times (-3) \times (-3) \times (-3)$

- $-3^7$
- $-3^3$
- $-3^6$
- $-3^4$

13) Simplify the following expressions in base exponent form:  $a \times a \times a \times a \times a \times a \times a \times a \times a$

- $a^9$
- $a^7$
- $a^{12}$
- $a^{10}$



14) Simplify the following expressions in base exponent form:  $m \times m \times m \times m \times m \times m$

- $m?$
- $m?$
- $m^2$
- $m?$

15) Simplify the following expressions in base exponent form:  $k \times k \times k \times k \times k$

- $k^3$
- $k?$
- $k?$
- $k^2$

16) Simplify the following expressions in base exponent form:  $(a \times a \times a \times a \times a \times a) \div (a \times a \times a)$

- $a$
- $a^2$
- $a^3$
- $a?$

17) Simplify the following expressions in base exponent form:  $(a \times a \times a \times a) \div (a \times a \times a \times a)$

- $2 \div a$
- $4 \div a$
- $1 \div a$
- $a$

18) Simplify the following expressions in base exponent form:  $x^2 \times x^2 \times x^2 \times x^2 \times x^2 \times x^2$

- $x^{12}$
- $x$
- $x^{1?}$
- $6x$



19) Simplify the following expressions in base exponent form:  $(x^2 \times x^2 \times x^2 \times x^2 \times x^2) \div (x^3 \times x^3 \times x^3)$

- $x^?$
- $x^2$
- $x$
- $x^3$

20) Simplify the following expressions in base exponent form:  $(a^? \times a^? \times a^? \times a^? \times a^? \times a^?) \times (a^? \times a^? \times a^? \times a^? \times a^?)$

- $a^{3?}$
- $a^{12}$
- $a^{22}$
- $a^{??}$

21) Add  $3x^2 + 6x - 4$  and  $9x^2 - 4 + 3x$

- $23x^2 + 12x - 8$
- $12x^2 + 9x - 8$
- $14x^2 + 12x - 6$
- $19x^2 + 17x - 6$

22) Add:  $6a + 5c - 3b$  and  $-5c - 3a + 4b$

- $4a + b$
- $3a + b$
- $6a + b$
- $2a + 2b$

23) Add:  $5 + 4x + 7x^2$ ,  $4x + 2x^2 - 5$  and  $2x^2 + 6 - 5x$



- $31x^2 + 8x + 3$
- $21x^2 + 7x + 4$
- $11x^2 + 3x + 6$
- $17x^2 + 7x + 8$

24) Add:  $4a - 5b + 10c - 5d$ ,  $7b + 6c + 3d + 4a$  and  $9c + 3d - 8b + 2a$

- $10a - 6b + 25c + d$
- $12a - 5b + 12c + d$
- $9a - 8b + 22c + 4d$
- $11a - 2b + 22c + 2d$

25) Subtract  $3x + 7y$  from  $9x + 8y$

- $6x + 7y$
- $5x + 6y$
- $x + 6y$
- $6x + y$

26) Subtract  $3a + 4b$  from  $9c - 5a + 7b$

- $-6a + 12b + 7c$
- $-8a + 3b + 9c$
- $-10a + 6b + 19c$
- $-12a + 31b + 12c$

27) Subtract  $4x + 7 - 4x^2$  from  $12 - 3x + 5x^2$

- $12x^2 - 6x + 7$
- $7x^2 - 6x + 7$
- $9x^2 - 7x + 5$
- $12x^2 - 8x + 7$



28) Subtract  $5x - 8z + 4y$  from  $8x - 2y - 6z$

- $4x - 8y + z$
- $3x - 6y + 2z$
- $4x - 7y + 3z$
- $4x - 5y + 3z$

29) Multiply:  $x$  with  $(x + 1)$

- $x^2 + x$
- $x + 1$
- $x^3 + x$
- $x^2 - x$

30) Multiply :  $(-a) \cdot (b + 2c)$

- $-ab + 2ac$
- $ab - 2ac$
- $ab + 2ac$
- $-ab - 2ac$