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

- 10
- 8
- 6
- 15

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

- 33
- 24
- 2116

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

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

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

- 65
- 45
- 70
- 90

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



- 11
- 13
- 19
- 16

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

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

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

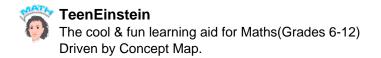
- -7
- -8
- -6
- -9

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

- 6
- 3
- 5
- 8

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

- -14
- -16
- -11



• -12

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

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

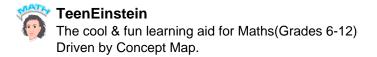
11) Simplify the following expressions in base exponent form: 3 × 3 × 3 × 3 × 3

- 3?
- 3?
- 3²
- 3?

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

- -3?
- -3?
- -3³
- -3?

- a¹²
- a?
- a?
- a¹?



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

- m?
- m²
- m?
- m?

15) Simplify the following expressions in base exponent form: k × k × k × k × k

- k?
- k³
- k?
- k²

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

- a³
- a?
- a
- a²

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

- 2÷a
- a
- 4÷a
- 1÷a

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

- X
- X¹²
 X¹?
- x · ·

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
- X³
- X²
- x?

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

- a¹²
- a³?
- a??
- a²²

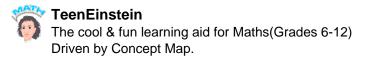
21) Add $3x^2 + 6x - 4$ and $9x^2 - 4 + 3x$

- 12x² + 9x 8
- 23x² + 12x 8
- 19x² + 17x 6
- 14x² + 12x 6

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

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

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



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

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

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

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

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

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

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

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

- $7x^2 6x + 7$
- $9x^2 7x + 5$
- 12x² 8x +7
- $12x^2 6x + 7$

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

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

29) Multiply: x with (x + 1)

- X³ + X
- x + 1
- X² X
- x² + x

30) Multiply : (-a) . (b + 2c)

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