Think Academy

What Are Algebraic Expressions? Understanding Variables and Constants

1 Among the following: $-3x$, $6-a=2$, $4ab^2$, 0, $\frac{m-3}{m}$, $\frac{1}{2}$, $\frac{1}{2}>\frac{1}{3}$, and x, how many algebraic expressions are there?

A. 7 B. 6 C. 5 D. 4

2 Among the following: $2y$, $\frac{n+2}{n}$, $5k-1=4$, x^2y, 0.9, $1<2$, a, and 7, how many algebraic expressions are there?

A. 4 B. 5 C. 6 D. 7

3 Among the following: $\frac{p}{p+1}$, 1, $2x=3$, $-ab^2$, π, $y<1$, $4m$, and $\frac{2}{4}=\frac{1}{2}$, how many algebraic expressions are there?

A. 5 B. 6 C. 7 D. 8

4 How many variables does $2xy-xyh+3xyz-5$ have?

A. 2 B. 3 C. 4 D. 5

5 How many variables does $3xz + y + 25$ have?

A. 1 B. 2 C. 3 D. 4

6 Fill in the blanks.

	$3a - 1$	$-x + 5x + 7$	$-2xy + 6xy - 3$
Number of Variables	____	____	____

7 The constant term of $-\frac{xy^3}{3} - 0.01x^3y - 5x^4y^2 + x^2y - 1$ is _____ .

8 Which of the following does not contain a constant term?

A. $3x - 2$ B. $2x + \frac{y}{2} + \frac{1}{2}$ C. $4x + \frac{3}{y}$ D. $13 - 3y + x$

9 How many constant terms in the algebraic expressions are even numbers?

$$\frac{3}{8}x+11;\ 5x-6;\ 8-9x;\ 7x-10+9y$$

A. 1 B. 2 C. 3 D. 4

10 A two-digit number has x as its tens digit and y as its ones digit. What is this two-digit number?

A. $x+y$ B. $10xy$ C. $10\left(x+y\right)$ D. $10x+y$

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What Are Algebraic Expressions? Understanding Variables and Constants

1 Among the following: $-3x$, $6-a=2$, $4ab^2$, 0, $\frac{m-3}{m}$, $\frac{1}{2}$, $\frac{1}{2}>\frac{1}{3}$, and x, how many algebraic expressions are there?

A. 7 B. 6 C. 5 D. 4

Answer B

Solution Algebraic expressions: $-3x$, $4ab^2$, 0, $\frac{m-3}{m}$, $\frac{1}{2}$, x.

There are 6 algebraic expressions.

The answer is B.

2 Among the following: $2y$, $\frac{n+2}{n}$, $5k-1=4$, x^2y, 0.9, $1<2$, a, and 7, how many algebraic expressions are there?

A. 4 B. 5 C. 6 D. 7

Answer C

Solution Algebraic expressions: $2y$, $\frac{n+2}{n}$, x^2y, 0.9, a, 7.

There are 6 algebraic expressions.

The answer is C.

3 Among the following: $\frac{p}{p+1}$, 1, $2x=3$, $-ab^2$, π, $y<1$, $4m$, and $\frac{2}{4}=\frac{1}{2}$, how many algebraic expressions are there?

A. 5 B. 6 C. 7 D. 8

Answer A

Solution Algebraic expressions: $\frac{p}{p+1}$, 1, $-ab^2$, π, $4m$.

There are 5 algebraic expressions.

The answer is $\mathbf{A}$.

4 How many variables does $2xy - xyh + 3xyz - 5$ have?

A. 2 B. 3 C. 4 D. 5

Answer C

Solution Four variables: x, y, z, h

The answer is $\mathbf{C}$.

5 How many variables does $3xz + y + 25$ have?

A. 1 B. 2 C. 3 D. 4

Answer C

Solution Three variables: x, y, z.

The answer is $\mathbf{C}$.

6 Fill in the blanks.

	$3a - 1$	$-x + 5x + 7$	$-2xy + 6xy - 3$
Number of Variables	____	____	____

Answer 1:1

2:1

3:2

Solution

	$3a-1$	$-x+5x+7$	$-2xy+6xy-3$
Number of Variables	1	1	2

7 The constant term of $-\frac{xy^3}{3}-0.01x^3y-5x^4y^2+x^2y-1$ is _____.

Answer -1

Solution The constant term is -1.

8 Which of the following does not contain a constant term?

A. $3x-2$ B. $2x+\frac{y}{2}+\frac{1}{2}$ C. $4x+\frac{3}{y}$ D. $13-3y+x$

Answer C

Solution The answer is C.

9 How many constant terms in the algebraic expressions are even numbers?

$$\frac{3}{8}x+11;\ 5x-6;\ 8-9x;\ 7x-10+9y$$

A. 1 B. 2 C. 3 D. 4

Answer C

Solution Constant is even: $5x-6;\ 8-9x;\ 7x-10+9y$.

The answer is C.

10 A two-digit number has x as its tens digit and y as its ones digit. What is this two-digit number?

A. $x+y$ B. $10xy$ C. $10\left(x+y\right)$ D. $10x+y$

Answer D

Solution ∵ The number has x as its tens digit and y as its ones digit.

∴The number is $10x+y$.

The answer is $\mathbf{D}$.