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## ALGEBRAIC EXPRESSIONS WORKSHEETS

1) Identify the algebraic expression(s) among the following.

a)  $3a - b - \frac{1}{2} = 1$

b)  $3a - 2b$

c)  $(pqr)^2 + 2pq - 3$

d)  $x = y$

2) Jim is asked to convert the following phrases into algebraic expressions. Can we help him?



a) sum of  $x$  and  $y$  is subtracted from their product.

b) 5 more than the sum of  $x$  and the reciprocal of  $y$ .

c) The difference of squares of  $m$  and  $n$ .

3) The number of terms in the expression  $3xyz - 2yz - \frac{3}{4}$  is

\_\_\_\_\_.

4) Classify the following as monomials, binomials, and trinomials.

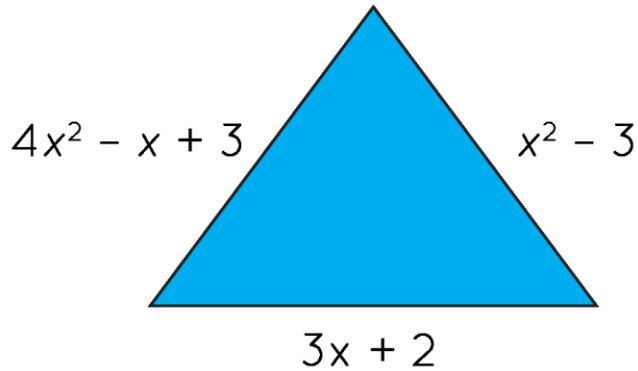
a)  $2x - yz$

b)  $(pqr)^2 - \frac{1}{2}r + 3$

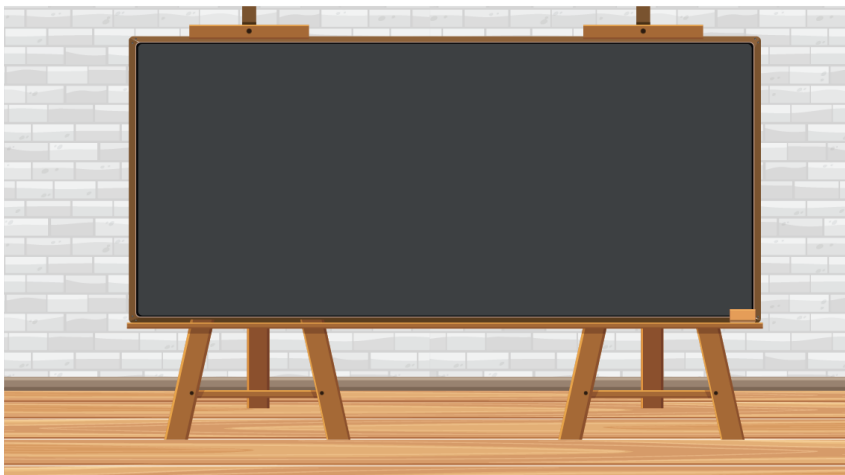
c)  $\frac{3xy}{4}$

5) Simplified form of  $2(x+4)+3(x-5)-2y=$  \_\_\_\_.

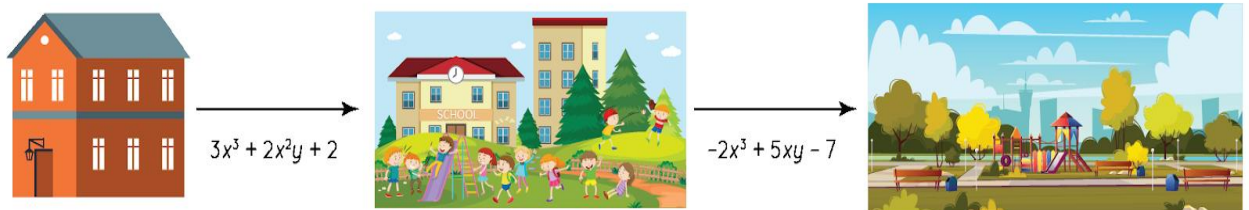
6) Find the perimeter of the following triangle as an algebraic expression:



7) The area of a rectangle is represented by an algebraic expression  $3x^3 - 5x + 7$  square units. Calculate its area when  $x = 3$ .



8) The distance from Emma's house to her school is  $(3x^3 + 2x^2y + 2)$  units and the distance from her school to park is  $(-2x^3 + 5xy - 7)$ . Then find the distance from her house to the park.



9) Add the following algebraic expressions:

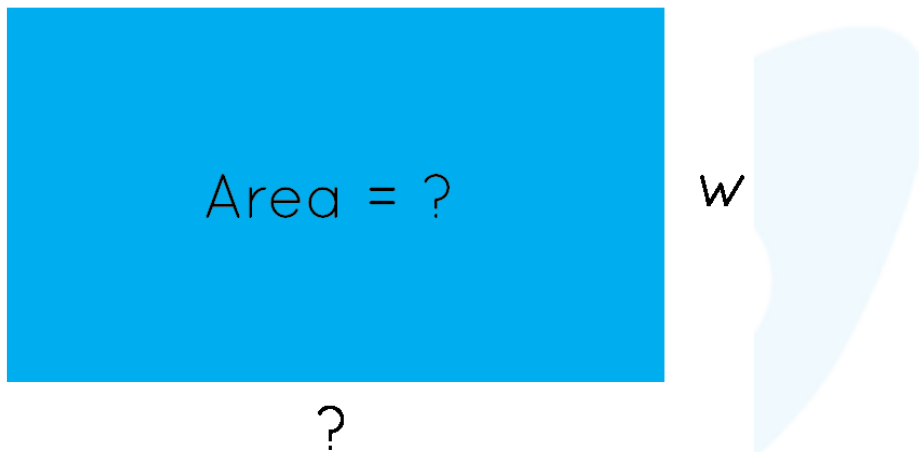
$12x - 10y + 5xy + 23$ ,  $17 + 5x - 10y - 8xy$ , and  $-8xy$

10) The length of a rectangle is 5 units more than half of its width. Then

a) What is its length as an algebraic expression?

b) Find an expression for its area.

Assume its width to be  $w$ .



11) Evaluate the following algebraic expressions at the given values:

a)  $\sqrt{x} + 3$ , when  $x = 16$

b)  $\frac{8}{15}x + \frac{1}{5}$ , when  $x = 3$

12) Factor out the coefficient of the variable:

a)  $\frac{17}{4} + \frac{5}{8}x$

b)  $0.8k + 3.2$

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## ANSWERS

1)	Options b) and c)
2)	a) $xy - (x + y)$ b) $x + \frac{1}{y} + 5$ c) $m^2 - n^2$
3)	3
4)	a) Binomial b) Trinomial c) Monomial
5)	$5x - 2y - 7$
6)	$5x^2 + 2x + 2$
7)	73 square units
8)	$x^3 + 2x^2y + 5xy - 5$
9)	$17x - 20y - 11xy + 40$
10)	$\frac{1}{2}w^2 + 5w$ square units
11)	a) 7 b) $\frac{9}{5}$
12)	a) $\frac{5}{8} \left( \frac{34}{5} + x \right)$ b) $0.8(k + 4)$

## FUN FACT

1. An algebraic expression may contain a single term or the sum of two or more terms.
2. There is no “=” symbol in an algebraic expression.  
For example,  $2x + 3$  is an algebraic expression.
3. If an algebraic expression is set equal to something, then it is called an equation.  
For example,  $2x + 3 = 4$  is an equation.

