

1.19.16 Class Activity: Algebraic Expressions

Write two *different* numeric expressions for the context below:

Maria bought 5 apples for \$0.35 each.

How would the expression change if she spent \$0.40 on each apple?

What if you didn't know how much each apple cost, how could you write an expression?

For each context, four algebraic expressions are offered. Make a conjecture about the correctness of the expression. Then, evaluate it for the given value, and explain why the expression did or didn't work for the given context.

- Ryan bought 3 CDs for x dollars each and a DVD for \$15. Write an expression of how much money Ryan spent.

	Expression	Correct expression?	Evaluate $x = 7$	Did it work?	Why or why not?
a.	$3 + x + 15$				
b.	$15x + 3$				
c.	$15 + x + x + x$				
d.	$3x + 15$				

- I started with 12 jellybeans. Sam ate 3 jellybeans and then Cyle ate y jellybeans. Write an expression for how many jellybeans were left.

	Expression	Correct expression?	Evaluate $y = 6$	Did it work?	Why or why not?
a.	$12 - 3 - y$				
b.	$12 - (3 - y)$				
c.	$12 - (3 + y)$				
d.	$9 - y$				

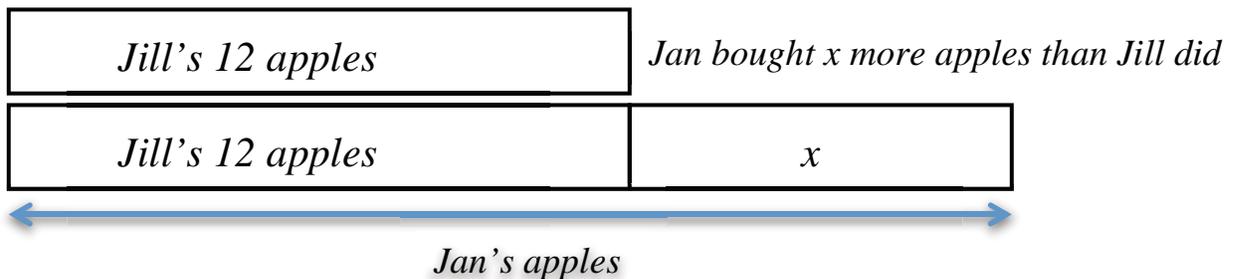
3. Kim bought a binder for \$5 and 4 notebooks for n dollars each. She received a 30% discount on the items. Write an expression for how much she spent.

Expression	Do you think it will work?	Evaluate (use $n = 3$)	Did it work?	Why or why not?
a. $0.70(5 + 4 + n)$				
b. $0.70(4n + 5)$				
c. $0.70(5n + 4n)$				
d. $0.30(4n + 5)$				

For each context below, draw a model for the situation, label all parts, and then write an *expression* that answers the question. The first exercise is done for you.

Example: Jill bought 12 apples. Jan bought x more apples than Jill. Write an expression to show how many apples Jan bought.

Jan bought $12 + x$ apples.



4. Josh won 12 tickets. Evan won p tickets fewer than Josh. Write an expression to represent the number of tickets Evan won.

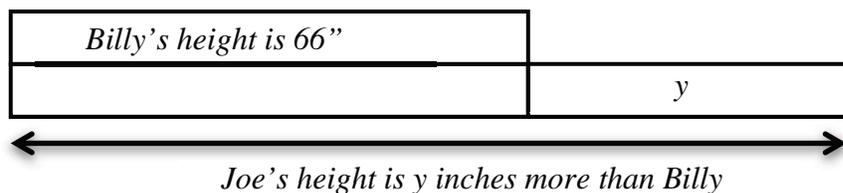
5. Tim is 3 years younger than his brother. If his brother is y years old, write an expression to represent Tim's age.

6. Carol washed 8 windows. Mila washed w windows fewer than Carol. If both Carol and Mila earn \$2 for each window they wash, write an expression to represent how much money Mila earned for washing windows.

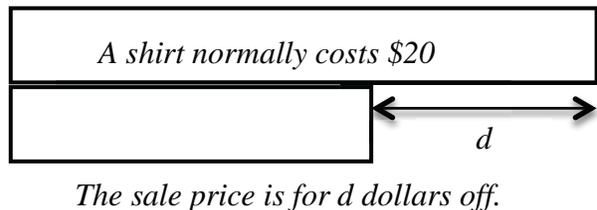
7. Jan bought a more apples than Jill. Jill bought 4 apples. Each apple costs \$0.10. Write an expression to show how much money Jan spent on apples.

For the following models, write a context (with question) and algebraic expression that fits the given model.

8.



9.



Create a context and draw a model for the following algebraic expressions.

10. $r + 15$

11. $1.75(x - 10)$

For each context involving a percent increase or decrease, write an algebraic expression for the questions. Use a model if desired:

12. Tanya had x number of marbles in her bag. She lost 25% of them when they spilled out by accident. Write an expression for the number of marbles she now has.
13. Bruno has an m inch vertical jump. He wants to increase it by 30%. Write an expression for how high he will be able to jump if he's able to increase his vertical jump by 30%.
14. It costs Guillermo d dollars to produce smartphone covers to sell. He wants to sell them for 45% more than it costs him to make them. Write an expression for how much he should sell the smartphone covers.
15. Juliana is training for a race. If she was able to reduce her time t by 17%, write an expression for how much time it will take to her run the race now.

1.19.16 Classwork: Algebraic Expressions

Read each context. Make a conjecture about which expressions will work for the context given. Evaluate the expression for a given value. Explain why the expression did or didn't work for the given context.

1. Bob bought 5 books for x dollars each and a DVD for \$12. Write an expression for how much money Bob spent.

	Expression	Do you think it will work?	<i>Evaluate</i> (use $x = 5$)	Did it work?	Why or why not?
a.	$5 + x + 12$				
b.	$5(x)12$				
c.	$x + x + x + x + x + 12$				
d.	$5x + 12$				

2. Jim won 30 tickets. Evan won y tickets fewer than Jim did. Write an expression for the number of tickets Evan won.

	Expression	Do you think it will work?	<i>Evaluate</i> (use $y = 6$)	Did it work?	Why or why not?
a.	$30 - y$				
b.	$y - 30$				
c.	$y + 30$				
d.	$30 \div y$				