

Lesson 1-1: Using Variables

Part 1: Modeling Relationships with Variables

1. 060408a, P.I. A.A.1
Tara buys two items that cost d dollars each. She gives the cashier \$20. Which expression represents the change she should receive?
[A] $20 + 2d$ [B] $20 - 2d$
[C] $20 - d$ [D] $2d - 20$
2. 080509a, P.I. A.A.1
The sum of Scott's age and Greg's age is 33 years. If Greg's age is represented by g , Scott's age is represented by
[A] $33 - g$ [B] $g - 33$
[C] $g + 33$ [D] $33g$
3. 010604a, P.I. A.A.1
Which expression represents "5 less than the product of 7 and x "?
[A] $7x - 5$ [B] $7(x - 5)$
[C] $5 - 7x$ [D] $7 + x - 5$
4. 010820a, P.I. A.A.1
If x represents a given number, the expression "5 less than twice the given number" is written as
[A] $2x - 5$ [B] $5 - 2x$
[C] $5 < 2x$ [D] $5 < 2 + x$
5. fall0729ia, P.I. A.A.2
Which verbal expression represents $2(n - 6)$?
[A] two times the quantity n less than six
[B] two times the quantity six less than n
[C] two times n minus six
[D] two times six minus n
6. 010224a, P.I. A.A.1
Ashanti and Maria went to the store to buy snacks for their back-to-school party. They bought bags of chips, pretzels, and nachos. They bought three times as many bags of pretzels as bags of chips, and two fewer bags of nachos than bags of pretzels. If x represents the number of bags of chips they bought, express, in terms of x , how many bags of snacks they bought in all.

7. 060113b, P.I. A.A.1
A store advertises that during its Labor Day sale \$15 will be deducted from every purchase over \$100. In addition, after the deduction is taken, the store offers an early-bird discount of 20% to any person who makes a purchase before 10 a.m. If Hakeem makes a purchase of x dollars, $x > 100$, at 8 a.m., what, in terms of x , is the cost of Hakeem's purchase?
- [A] $0.80x - 12$ [B] $0.20x - 15$
[C] $0.85x - 20$ [D] $0.20x - 3$
8. 010824a, P.I. A.A.1
The larger of two consecutive integers is represented by $x + 4$. Which expression represents the *smaller* integer?
- [A] $x + 3$ [B] $x + 6$
[C] $x + 5$ [D] $x + 2$
9. 010006a, P.I. A.A.1
If the number represented by $n - 3$ is an odd integer, which expression represents the next greater odd integer?
- [A] $n - 2$ [B] $n - 5$ [C] $n + 1$ [D] $n - 1$
10. 010506a, P.I. A.A.1
If $n + 4$ represents an odd integer, the next larger odd integer is represented by
- [A] $n + 3$ [B] $n + 5$
[C] $n + 2$ [D] $n + 6$
11. 080716a, P.I. A.A.1
In the Ambrose family, the ages of the three children are three consecutive even integers. If the age of the youngest child is represented by $x + 3$, which expression represents the age of the oldest child?
- [A] $x + 8$ [B] $x + 5$
[C] $x + 7$ [D] $x + 6$
12. 010712a, P.I. A.A.1
Which expression represents the product of two consecutive odd integers, where n is an odd integer?
- [A] $n(n + 3)$ [B] $n(n + 2)$
[C] $2n + 1$ [D] $n(n + 1)$

[1] B _____

[2] A _____

[3] A _____

[4] A _____

[5] B _____

[2] $7x - 2$ or $x + 3x + 3x - 2$, and appropriate work is shown, such as $x + 3x + 3x - 2$ when chips = x , pretzels = $3x$, and nachos = $3x - 2$.

[1] The expressions for snacks are represented correctly, but one computational error is made in adding the expressions.

or [1] The expressions for snacks are represented incorrectly, but the expressions are added appropriately.

or [1] $7x - 2$, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[6] incorrect procedure. _____

[7] A _____

[8] A _____

[9] D _____

[10] D _____

[11] C _____

[12] B _____