TUDY GUIDE!

ID: A

EXPRESSIONS AND EQUATIONS

Multiple Choice

Identify the choice that best completes the statement or answers the question.

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 1.	A triangle has sides with lengths of $5x - 2$, $3x - a$. a. $13x - 7$ b. $3x - 7$ c. $7x + 5$ d. $6x$	6, a	nd $5x + 1$. What is the perimeter of the triangle?
 2.	Simplify the expression $(5 \div 5) + 5 \times (5^2 - 5)$.		
	a. 145 b. 120	c. d.	101 26
 3.	Simplify the expression $2 \times 6^2 - 26 \div 2$. a. 59 b. 10	c. d.	46 131
 4.	Simplify the expression $222 - 3(5^2 - 4^2) + 12$.		
	a. 153 b. 118	c. d.	207 5,471
5.	Combine the like terms in the expression $16y - a$. $11 + y$ b. $9y^2$	7y. c. d.	23 <i>y</i> 9 <i>y</i>
 6.	Combine like terms in the expression $2a - 3b + a$. $3ab$ b. $3a + 2b$	5 <i>b</i> - c. d.	$a_{a} = -4b$ a + 2b
 7.	An item costs <i>n</i> dollars. If the price of the item expression $n + 0.2n$. Which expression can also a. $1.2n$	incr rep c.	eases by 20%, the new price can be represented by the resent the new price? n+1.2
 8.	 b. 0.2n For a sale, a store decreases its prices on all iter \$120-0.15(\$120). What is another expression a. 0.85(\$120) b. \$120-85 	d. ms b for c. d.	20n by 15%. An item that cost \$120 before the sale now costs the sale price? \$120 - 15 0.15(\$120)
 9.	Solve the equation $a - 28 = 19$. a. $a = -9$ b. $a = 9$	c. d.	a = 37 a = 47

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	1 0 .	Solve $x - 6\frac{1}{2} = 3\frac{2}{3}$.				
		a. $x = 10\frac{1}{6}$ c.	$x = 9\frac{1}{6}$			
		b. $x = 9\frac{3}{5}$ d	$x = -3\frac{1}{6}$			
	11.	Cindy bought 8 boxes of pens for \$4 each and 3 packages of paper for \$6 each. Simplify				
		$8 \times 4 + 3 \times 6$ to find the amount Cindy spent on pens	and paper.			
		a. \$18 c.	\$50			
		b. \$336 d.	\$108			
	12.	Earth is made up of several different elements. Supp 36% as a decimal.	ose a certain element makes up 36% of Earth. Express			
		a. 0.36 c.	3.6			
		b. 0.036 d.	2.78			
	13.	Which is a solution for the equation $n - 3 = 15$?				
		a. $n = 12$ c	n = 18			
		b. $n = 13$ d.	n=19			
	14.	Which is a solution for the equation $3n = 60$?				
		a. $n = 20$ c.	n=12			
		b. $n = 56$ d.	<i>n</i> = 36			
	15.	Antonio has read at least 12 more books than Benji. If Benji has read 31 books, at least how many books has Antonio read?				
		a. at least 43 books c.	at least 19 books			
		b. at most 19 books d.	at most 43 books			
	16.	Evaluate the expression $x \bullet y$ for $x = -5$ and $y = 6$.				
		a. 30 c.	-30			
		b. 1 d.	-1			
	17.	What is the greatest possible integer solution of the inequality $3.868x < 12.129$?				
		a. 3 c.	4			
		b. 2 d.	3.14			

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18. Keith is given the following math problem to solve.

Enya has \$160 in her bank account. During March, she earns \$7.50 per hour baby-sitting. After depositing her earnings in the account, she has \$340. How many hours did Enya baby-sit in March?

Keith used the numeric method below to solve the problem. Which algebraic solution matches his numeric method?

1) Subtract 160 from 340 to find the amount Enya earned during March.

2) Divide the result by 7.5 to find the number of hours Enya spent baby-sitting.

a.	160 + 7.5h = 340	с.	h + (7.5)160 = 340
	-160 = -160		-160 = -160
	7.5h = 180		h + 7.5 = 180
	$h=\frac{180}{7.5}$		$h = \frac{180}{7.5}$
b.	7.5h - 160 = 340	d.	160h + 7.5 = 340
	+160 = +160		-160 = -160
	7.5h = 500		h + 7.5 = 180
	$h = \frac{500}{7.5}$		$h = \frac{180}{7.5}$

19. The length of a rectangle is 99 centimeters. Find all possible values for the width of the rectangle if the perimeter is at least 264 centimeters.

a. $w \ge 165 \text{ cm}$ b. $w \ge 33 \text{ cm}$ c. $w \le 33 \text{ cm}$ d. $w \le 165 \text{ cm}$

Short Answer

Name:

- 1. Simplify the expression. 4-3(2+5v)+7
- 2. A shirt costs \$16.74.
 - *Part A:* How much change should you receive if you give the cashier \$20.99? Show your work.
 - **Part B:** How much change should you receive if the shirt is on sale for only \$14.46 and you give the cashier \$20.99? Show your work.
- 3. The daytime thermometer reading of 72°F is 13°F lower than the daytime temperature required for the opening of Samantha's neighborhood outdoor pool. Does the pool open when the temperature is 59°F or 85°F? Use substitution of both numbers in an equation to prove the answer.

- 4. By dividing the number of houses in Antonio's subdivision by 4 and adding 15, you can find the number of houses in Hector's subdivision. If Hector has 47 houses in his subdivision, how many houses are in Antonio's subdivision?
- 5. If you triple the number of times Elizabeth has cooked dinner for her family and then add 4, you get the number of times her sister Joy has cooked the family's dinner. If Joy has cooked the family's dinner 25 times, how many times has Elizabeth cooked dinner?

Essay

1. An electrician charges \$170 for a service call and \$60 for each hour of work after the first hour.

Let *h* represent the hours the electrician works on a service call that exceeds 1 hour. Danae wrote the expression 170 + (h - 1)(60) to represent the cost of hiring this electrician. Juana wrote the expression 110 + 60h to represent the cost.

Part A: Are these expressions equivalent? Justify your answer.

Part B: Explain some of the strengths and weaknesses of each expression. Which one seems like a clearer representation of the electrician's billing charge? Which would you rather use to calculate the charge for a job?