

**Unit 6 Review - CC Math 6 PLUS**

REMEMBER: Partial credit is granted only when work is shown and comprehensible!

Write the definitions of the terms in your own words, make your own expression, and give the examples from your expression.

Your Own Expression	Answers may vary $3(x+2) - 4 \rightarrow 3x + 6 - 4 \rightarrow 3x + 2$	
	Definition	Example
Variable	AN UNKNOWN NUMBER REPRESENTED BY A LETTER OR SYMBOL	X
Term	A SINGLE NUMBER OR VARIABLE SEPARATED BY AN "+" OR "-"	-4, 3x 2
Coefficient	NUMBER BEFORE THE VARIABLE	3
Quantity	SPECIFIED AMOUNT OF SOMETHING.	3
Constant	A VALUE THAT DOES NOT CHANGE.	2* -4

\* THE TWO OF THE LAST EXPRESSION IS A CONSTANT & THE -4 BUT IN THE PARENTHESES MUST FIRST BE SIMPLIFIED.

1. Explain the difference between Like and Unlike Terms & provide examples.

LIKE TERMS ARE TERMS THAT HAVE THE SAME VARIABLE & SAME POWERS

2. Which pair of expressions are equivalent?

$3g + h$  and  $3(g+h)$        $p - o$  and  $o - p$        $7wz$  and  $3w + 4z$        $4(x+y)$  and  $7x + 4y - 3x$   
 $\downarrow$   
 $3g + 3h$        $4x + 4y$        $(7x + 4y) - (3x)$   
 $4x + 4y$

Simplify each expression. Write your answer neatly on the line.

3.  $2(5n + n) + 6n = \underline{18n}$   
 $10n + 2n + 6n$

5.  $8(5h + 2g) + 16(g - h) = \underline{24h + 32g}$   
 $40h + 16g + 16g - 16h$   
 $24h + 32g$

4.  $\frac{40}{8}m + 13 + 7(8m + 4) = \underline{61m + 41}$   
 $5m + 13 + 56m + 28$   
 $61m + 41$

6.  $11p + 5(7p + 3) + 8 = \underline{46p + 23}$   
 $11p + 35p + 15 + 8$

Translate the following words into algebraic expressions.

7. the sum of  $p$  and 10  $p+10$

9. the quotient of  $q$  and 2  $q/2$   $q \div 2$

8. 14 less than the product of  $r$  and 18  
 $(18r) - 14$

10. The product of 5 and the sum of 7 and  $d$   
 ~~$5(7+d)$~~   $5(7+d)$

Translate the following algebraic expressions into words and the following words into algebraic expressions.

11. Seven divided by the product of a number and 3  $\frac{7}{n \times 3}$

12.  $(32x^3) - 6$  SIX LESS THAN 32 TIMES A NUMBER TO THE THIRD POWER  
Evaluate when  $x = 3$ . Answer 858  
 $(32(3^3)) - 6$   
 $(32(27)) - 6$   
 $864 - 6$

13. Subtract 16 from the quotient of 4 and  $t$   $(4 \div t) - 6$

14.  $12x - 10 + 3x^4$  12 TIMES A NUMBER MINUS 10 PLUS 3 TIMES A NUMBER TO THE FOURTH POWER  
Evaluate when  $x = 2$ . Answer 62  
 $12(2) - 10 + 3(2)^4$   
 $24 - 10 + 3(16)$   
 $24 - 10 + 48$   
 $14 + 48$

Write and evaluate the expressions:

15. The formula for the perimeter of rectangle is  $P = 2l + 2w$ . The length of the rectangle is 3 units shorter than the width. Write an algebraic expression that can be used to find the perimeter of the rectangle.

$4w - 6$   
 $L = w - 3$   
 $P = 2(w - 3) + 2w$   
 $= 2w - 6 + 2w$   
 $= 4w - 6$

16. What is the perimeter of the rectangle in Question 16 if the length is 5 cm? 26cm

$L = 5$   
 $w = 5 + 3$   
 $w = 8$   
 $P = 2(5) + 2(8)$   
 $P = 10 + 16$   
 $P = 26$

17. Angie and her friends want to go to the opening night of an upcoming movie. In order to avoid the long lines at the ticket counter, Angie agreed to order all the tickets online. There are two main websites that sell tickets.

Fandango.com: Tickets are \$8 each with a \$1 handling fee per ticket

Ticketmaster.com: Tickets are \$10 each with a handling fee of \$2 total (not per ticket)

a. Write an expression for the price to order "m" tickets on each website.

Fandango.com:  $8x + 1$

Ticketmaster.com:  $10x + 2$

18. You are taking your car in to get fixed. They tell you it will cost you \$35 an hour for labor and \$212 for the parts. If they work on your car for 4 hours how much will you owe them?

$$35x + 212 \rightarrow 35(4) + 212 \rightarrow 140 + 212 = \underline{\$352}$$

19. The Carolina Panthers sell their tickets for \$20 to adults and \$12 for kids. Write an expression that represents the total amount of money spent at a game.

$$20a + 12k$$

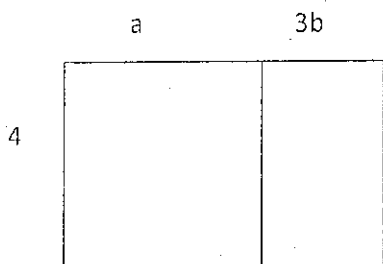
Suppose 45 adult tickets were sold and 12 student tickets were sold in the first ten minutes. How much money was spent?

$$20(45) + 12(12) \\ 900 + 144$$

$$\underline{1044}$$

Use the distributive property to represent the area model. (Don't forget to also simplify the expression)

20.

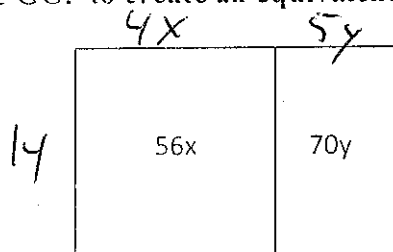


Expression:  $4(a + 3b)$

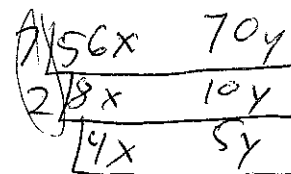
Answer (simplified):  $4a + 12b$

Find the GCF to create an equivalent expression.

21.

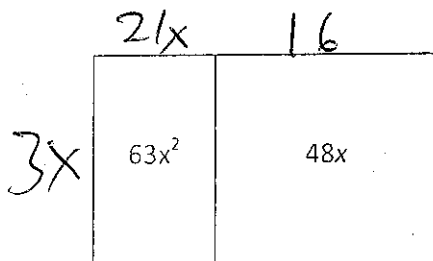


Expression:  $14(4x + 5y)$



$7 \times 2 = 14$

22.



Expression:  $3x(21x + 16)$

