Name Key Block

Assessment 3 Review Guide

6.NS.4 Greatest Common Factor and Least Common Multiple

1. Find the least common multiple and greatest common factor of each pair of numbers:

	Least Common Multiple	Greatest Common Factor
12 and 30	60	6
3 and 5	15	1
20 and 30	60	10
8 and 10	40	2

2. You are planning a party and coming up with seating charts. You can either have your guests in tables of 8 or 10. What is the smallest number of people that you could have at the party?

Use LCM: 8: 8, 16, 24, 32, 40...
10: 10, 20, 30, 40...
40

3. Today, Ellis and Jackson eat lunch at the same time. Jackson eats his lunch at this time every 6 days. Ellis eats his lunch at this time every 8 days. After how many days will they eat lunch at the same time again?

Use LCM: 6: 6, 12, 18, 24...
8: 8, 16, 24...
24

6.EE.1 Writing and Evaluating Expressions

4. Write each expression using an exponent:

$x \cdot x \cdot x \cdot x \cdot x \cdot x = x^6$ $9 \cdot 9 \cdot 9 \cdot 9 = 9^4$ $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 2^6$

5. Evaluate the expressions. Show your work.

a. $3 + 10 \div 2 + 2 \bullet 4^2$

$3 + 10 \div 2 + 2 \cdot 16$
$3 + 5 + 32$
40

b. $(0.12)^2$

0.12×0.12
0.0144

c. $80 - 18 \cdot 1/3 \div 2 + 1$

$80 - 6 \div 2 + 1$
$80 - 3 + 1$
78

d. $42 \div 3 \times (1/2) + 9 - 3^2$

$42 \div 3 \times (1/2) + 9 - 9$
$14 \times (1/2) + 9 - 9$
$7 + 9 - 9$
7

6.EE.2 Write, Read, and Evaluate Expressions with Variables

6. Write an expression to model each situation:

a. The difference of 12 and a number *a*. $12-a$

b. The product of 8 and *r*. $8r$

c. Three times the sum of a number *x* and 6. $3(x+6)$

d. The sum of 10 and the quotient of 12 and *s*. $10+12\div s$

e. Subtract 4 from x, then multiply the result by 2 $2(x-4)$

f. Joanne is selling 15 books at *d* dollars per book. $15d$

g. Cat purchased 4 theatre tickets for *x* dollars each and a $25.00 program. $4x+25$

h. Jessica has 12 boxes of books, that each contain *b* books. $12b$

i. Nicole has 14 fewer points than Tom, who has *x* points. $x-14$

7. Identify the parts of each expression in the table below.

	$8x-9+12y$	$6x-15$	$9x^2-3x+1$
Variable(s)	x, y	x	x
Constant	−9	−15	1
Coefficient of x	8	6	−3
Number of Terms	3	2	3

8. Evaluate the expressions for the given values of the variables.

$6+3a^3+5b$; if $a=2$ and $b=4$

$6+3(2)^3+5(4)$

$6+3\cdot 8+5(4)$

$6+24+20$

50

$2x^2+6y-z$; if x = 5, y = 3, and z = 4

$2\cdot 5^2+6\cdot 3-4$

$2\cdot 25+6\cdot 3-4$

$50+18-4$

64

9. The expression $6s^2$ can be used to find the surface area of a square with side s.

a) What is the surface area of a square whose side measures 9 cm? Show your work.

$6\cdot 9^2 = 6\cdot 81 = 486\ cm^2$

b) What is the surface area of a square whose side measures 2.3 in? Show your work.

$6\cdot 2.3^2 = 6\cdot 5.29 = 31.74\ in^2$

6.EE.3 Simplify Expressions

10. Circle the mistakes in the following solutions and explain the errors. Then, write the corrected steps. Show your work.

a)
$$15x + 2 \cdot 6 + 3(2x - 6)$$
$$15x + 2 \cdot 6 + 6x - 6$$
$$15x + 12 + 6x - 6$$
$$21x + 6$$

Error: forgot to distribute the 3 to the 6

$15x+2\cdot6+3(2x-6)$
$15x+2\cdot6+6x-18$
$15x+12+6x-18$
$21x-6$

b)
$$3 \cdot 2^2 + 6(3x - 1) + 9x$$
$$3 \cdot 2^2 + 18x - 6 + 9x$$
$$6^2 + 18x - 6 + 9x$$
$$36 + 18x - 6 + 9x$$
$$27x + 30$$

Error: Calculated exponents before multiplying; should have

$3\cdot2^2+6(3x-1)+9x$
$3\cdot2^2+18x-6+9x$
$3\cdot4+18x-6+9x$
$12+18x-6+9x$
$6+27x$

11. Simplify each expression:

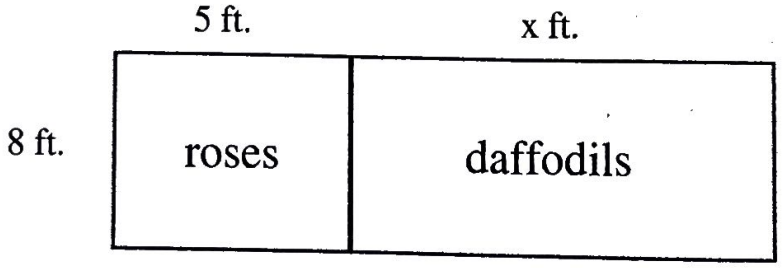
a. $3x+4(1+3x)$

$3x+4+12x$
$15x+4$

b. $5(x+8)-5$

$5x+40-5$
$5x+35$

12. Jessica grows two different types of flowers as shown below.



a. Write an expression for the total area of Jessica's garden using the variable *x*.

$8(5+x)$ OR $8\cdot5+8\cdot x$ $(40+8x)$

b. If $x = 6$ feet, what is the area of Jessica's garden? Show your work.

$8(5+6)$
$8(11)$
88

OR

$8\cdot5+8(6)$
$40+48$
88

$88\ ft^2$

6.EE.4 Identifying Equivalent Expressions

13. There are 5 expressions listed below. Test each expression to determine if it is equivalent to the expression **$10x - 4$**. Fill in the table to show your work.

Expression	Work	Equivalent to 10x – 4? (Yes or No)
$2(5x-2)$	$2(5x-2)$ $10x-4$	Yes
$5x+8+5x+4$	$5x+8+5x+4$ $10x+12$	No
$10(x+4)$	$10(x+4)$ $10x+40$	No
$10+6x+4x$	$10+6x+4x$ $10+10x$	No
$2(5x+2)+8$	$2(5x+2)+8$ $10x+4+8$ $10x+12$	No

14. Allison said that the expression $7x + 4x$ **always** equals 11x. Julianne said that $7x + 4x$ **always** equals 11. Who is correct? Justify your answer.

Allison is correct. Combine like terms in $7x+4x$ to get $11x$.

15. Are the expressions $6 + 4(2x + 5) + 4x$ and $12x + 20$ equivalent? Justify your answer.

$6+8x+20+4x$

$26+12x$

No

16. Are the expressions $7(3x + 5) - 6x - 1$ and $15x + 4$ equivalent? Justify your answer.

$21x+35-6x-1$

$15x+34$

No

17. Which of the following are equivalent to $7r - 9 + 3 - 2r$? Select all correct answers.

~~a) $5r+6$~~ ~~b) $9r-6$~~ (c) $5r-6$ ~~d) $4r-6+3r$~~ ~~e) $5r+12$~~