Unit 0: Algebra Review (50) Period ___ Name Key

SWBAT simplify expressions using order of operations.

Simplify each expression. Show all work to receive full credit. (3 pts each)

1. $\frac{(3-15)}{(-2-4)}$

$\frac{-12}{-6} = 2$

2. $4[24-3(7)]$

$= 4[24-21]$
$= 4[3]$
$= 12$

3. $2^3 + (15 \div 5)$

$= 8 + (15 \div 5)$
$= 8 + (3)$
$= 11$

1.	+2	3
2.	12	3
3.	11	3

4. $2 \cdot 30 - 12 \cdot 4$

$= 60 - 12 \cdot 4$
$= 60 - 48$
$= 12$

5. $-2(3x - 5x + 6)$

$= -6x + 10x - 12$
$= 4x - 12$

4.	12	3
5.	$4x-12$	3

15

SWBAT solve multi-step linear equations.

Solve each equation. Show all work to receive full credit.

6. $3x = 10 - 2x$ (2 pts)

$+2x \quad +2x$
$5x = 10$
$\frac{5x}{5} = \frac{10}{5}$
$x = 2$

7. $4x + 2(x-1) = -12$ (4 pts)

$4x + 2x - 2 = -12$
$6x - 2 = -12$
$+2 \quad +2$
$\frac{6x}{6} = \frac{-10}{6}$
$x = \frac{-10}{6} = \frac{-5}{3}$

6.	$x=2$	2
7.	$x=-\frac{5}{3}$	4

8. $6 + 3x = 5x + 4$ (3 pts)

$-3x \quad -3x$
$6 = 2x + 4$
$-4 \quad -4$
$\frac{2}{2} = \frac{2x}{2}$
$1 = x$ or $x = 1$

9. $-2\left(x - \frac{1}{2}\right) = -2$ (3 pts)

$-2x + 1 = -2$
$-1 \quad -1$
$\frac{-2x}{-2} = \frac{-3}{-2}$
$x = 3/2$

8.	$x=1$	3
9.	$x=3/2$	3

10. $3x + 2 + 5x + 18 = 180$ (3 pts)

$8x + 20 = 180$
$-20 \quad -20$
$\frac{8x}{8} = \frac{160}{8}$
$x = 20$

11. $90 - (3x - 7) = 31$ (3 pts)

$90 - 3x + 7 = 31$
$97 - 3x = 31$
$-97 \quad -97$
$\frac{-3x}{-3} = \frac{66}{-3}$
$x = -22$

10.	$x=20$	3
11.	$x=-22$	3

18

Key

SWBAT evaluate algebraic expressions.

Evaluate each of the following for the given value. Show all work to receive full credit.

12. $3x - 11;\ x = 5$ (2 pts)

$3(5) - 11$
$= 15 - 11$
$= 4$

12.	4	2

13. $2x^2 + 3x - 5;\ x = -2$ (3 pts)

$2(-2)^2 + 3(-2) - 5$
$= 2(4) - 6 - 5$
$= 8 - 6 - 5$
$= -3$

13.	-3	3

4/5

SWBAT solve quadratic equations by factoring using the grouping method.

Factor each of the following. Show all work to receive full credit.

14. $x^2 - 10x - 24$ (2 pts)

$x^2 + 2x - 12x - 24$
$x(x+2) - 12(x+2)$
$(x+2)(x-12)$

ac	b
-24	$(-)10$
$(1, 24)$	23
$(2, 12)$	10

14.	$(x+2)(x-12)$	2

15. $2x^2 - 5x - 12$ (3 pts)

$2x^2 - 8x + 3x - 12$
$2x(x-4) + 3(x-4)$
$(2x-3)(x-4)$

ac	b
24	$(-)5$
$(1, 24)$	23
$(2, 12)$	10
$(3, 8)$	5

15.	$(2x-3)(x-4)$	3

5/5

Solve each of the following by factoring. Show all work to receive full credit.

16. $x^2 + 8x + 12 = 0$ (3 pts)

$x^2 + 2x + 6x + 12 = 0$
$x(x+2) + 6(x+2) = 0$
$(x+2)(x+6) = 0$

$x + 2 = 0$ $\quad$ $x + 6 = 0$
$-2 \ -2$ $\quad$ $-6 \ -6$
$x = -2$ $\quad$ $x = -6$

ac	b
12	(+)8
$(1, 12)$	13
$(2, 6)$	8

16.	$x = -2, -6$	3

17. $2x^2 - 7x + 3 = 0$ (4 pts)

$2x^2 - 6x - x + 3 = 0$
$2x(x-3) - 1(x-3) = 0$
$(2x-1)(x-3) = 0$

$2x - 1 = 0$ $\quad$ $x - 3 = 0$
$+1 \ +1$ $\quad$ $+3 \ +3$
$\frac{2x}{2} = \frac{1}{2}$, $x = \frac{1}{2}$ $\quad$ $x = 3$

ac	b
6	(+)7
$(1, 6)$	7

17.	$x = \frac{1}{2}, 3$	4

7