

Assignment

Date Day 1 Period _____**Simplify each expression.**

1) $5a + 10a$

2) $-8b + 10b$

3) $x - 9 + 5x - 4$

4) $-7 - 3(b + 7)$

5) $3(8x + 7) - 5x$

6) $4(-6x - 4) - 4$

Solve each equation.

7) $3x - 2x = 0$

8) $18 = -2m + 5m$

9) $149 = -6 + 5(1 + 6n)$

10) $-6(4 + 6n) = 192$

11) $-3 - 8n = n + 5 - 8n$

12) $-(-3m - 7) = 18 - 8m$

NUMBER SYSTEMS:

Natural Numbers: $\{1, 2, 3, 4, \dots\}$

Whole Numbers: $\{0, 1, 2, 3, 4, \dots\}$

Integers: $\{\dots, -3, -2, -1, 0, 1, 2, 3, \dots\}$

Rational Numbers: Examples: $\frac{2}{3}, 7, 1.16, -4.\overline{26}, \sqrt{36}, 0, -\sqrt{\frac{4}{9}}$

Irrational Numbers: Examples: $\sqrt{10}, \pi, 2.010010001\dots$

Exercises:

1. Which of the following numbers is *not* an integer?

(1) -6

(2) 0

(3) $\frac{3}{4}$

(4) 4

2. Which of the following numbers is irrational?

(1) $\sqrt{1}$

(2) $\sqrt{2}$

(3) $\frac{3}{7}$

(4) $\sqrt{4}$

3. Which of the following numbers is an integer but *not* a whole number?

(1) 12

(2) $-\frac{3}{2}$

(3) $\sqrt{49}$

(4) -13

4. Which of the following numbers is rational?

(1) $\sqrt{13}$

(2) $\sqrt{14}$

(3) $\sqrt{15}$

(4) $\sqrt{16}$

5. Which of the following numbers is an integer but *not* a whole number?

(1) 1

(2) $\frac{1}{2}$

(3) -3

(4) $\sqrt{2}$

6. Which of the following numbers is irrational?

(1) $\sqrt{9}$

(2) $\sqrt{100}$

(3) $\sqrt{36}$

(4) $\sqrt{10}$

7. To the *nearest hundredth*, $\sqrt{150}$ is approximated by

(1) 12.24

(2) 12.25

(3) 13.16

(4) 18.34

Assignment

Date Day 2 Period **Simplify each expression.**

1) $1 - 8p + 1 - 7p$

2) $-9v + 6v$

3) $-6x + 1 - 2 + 8x$

4) $-5(x + 4) + 5$

5) $-(m - 2) - 4$

6) $8(4m + 8) + 3$

Solve each equation.

7) $-9 = -6x + 3x$

8) $-3 = 1 + 2k - 6k$

9) $105 = 3(6x + 5)$

10) $-5k - 5(1 - 3k) = -65$

11) $-2 + a + 2a = -a + 3a$

12) $-4 + 7(8k + 7) = -4 + 7k$

PROPERTIES OF REAL NUMBERS:

Commutative: $a + b = b + a$; $a \cdot b = b \cdot a$

Identity: $a + 0 = a$; $a \cdot 1 = a$

Associative: $(a + b) + c = a + (b + c)$; $(a \cdot b) \cdot c = a \cdot (b \cdot c)$

Distributive: $a(b + c) = ab + ac$

Inverse: $a + (-a) = 0$; $a \cdot \frac{1}{a} = 1$

Exercises:

1. Which of the following properties is illustrated by the equation $4 + 5 = 5 + 4$?
(1) Associative Property (3) Distributive Property
(2) Commutative Property (4) Identity Property _____

2. Which of the following properties is illustrated by the equation $6 \cdot 1 = 6$?
(1) Associative Property (3) Inverse Property
(2) Commutative Property (4) Identity Property _____

3. Which of the following equations is an example of the distributive property being applied?
(1) $3(x + 2) = 3x + 6$ (3) $4 + 0 = 4$
(2) $5 + (4 + 6) = (5 + 4) + 6$ (4) $5 \times 6 = 6 \times 5$ _____

4. Which of the following equations illustrates the identity property of multiplication?
(1) $4 \times 1 = 4$ (2) $4 + 0 = 4$ (3) $4 + 5 = 5 + 4$ (4) $4 \times 0 = 0$ _____

5. Which of the following properties is illustrated by the equation $a + (b + c) = (a + b) + c$?
(1) associative (2) commutative (3) identity (4) distributive _____

6. Which of the following properties is illustrated by the equation $6(n - 3) = 6n - 18$?
(1) Associative Property (3) Distributive Property
(2) Commutative Property (4) Identity Property _____

7. Which of the following properties is illustrated by the equation $4 + (-4) = 0$?
(1) Associative Property (3) Inverse Property
(2) Commutative Property (4) Identity Property _____

8. Which of the following properties is illustrated by the equation $(xy)z = x(yz)$?
(1) Associative Property (3) Distributive Property
(2) Commutative Property (4) Identity Property _____

Assignment

Date Day 3 Period _____**Simplify each expression.**

1) $-2k - k$

2) $-k - 7k$

3) $-7 - 8x + 7x$

4) $6(5 - 6k) + 2$

5) $6(8 + 3x) + 7x$

6) $2x - 4(1 + 6x)$

Solve each equation.

7) $5p + 6p = 11$

8) $-6 = 4n + 2n$

9) $124 = 4(-6k + 1)$

10) $-82 = -2(6x + 5)$

11) $-7x + 2x = -4x + 8 - 2$

12) $-14 - 7n = -4(n + 8)$

13. Which of the following properties is illustrated by the equation $2n + 8 = 8 + 2n$?

- | | |
|--------------------------|---------------------------|
| (1) Associative Property | (3) Distributive Property |
| (2) Commutative Property | (4) Identity Property |
- _____

14. Which of the following equations is an example of the identity property of multiplication?

- | | |
|---------------------|-----------------------|
| (1) $ab = ba$ | (3) $7 \cdot 0 = 0$ |
| (2) $x(yz) = (xy)z$ | (4) $1 \cdot 7x = 7x$ |
- _____

15. Which of the following properties is illustrated by the equation $4(n - 6) = 4n - 24$?

- | | |
|--------------------------|---------------------------|
| (1) Associative Property | (3) Distributive Property |
| (2) Commutative Property | (4) Identity Property |
- _____

16. Write an algebraic expression for each phrase.

a. 25 less than four times x

b. 40 more than the product of 5 and n

c. the quotient of 80 and the difference of $6x$ and 5

17. Juan buys n tickets online to a baseball game for \$45 each. He has to pay a \$5 service charge as well. Which of the following shows the total amount that Juan pays in terms of n ?

- | | | | |
|---------------|--------------|------------------------|---------------|
| (1) $5n + 45$ | (2) $n + 50$ | (3) $\frac{45}{n} + 5$ | (4) $45n + 5$ |
|---------------|--------------|------------------------|---------------|
- _____

Assignment

Date Day 4 Period _____**Simplify each expression.**

1) $-9k + 8k$

2) $-5m - 10m$

3) $p + 3 + 6p$

4) $-(1 - 7a) + 3a$

5) $-8 + 2(6 + 2n)$

6) $6(-3b + 2) - 5$

Solve each equation.

7) $-2a - 4a = 18$

8) $16 = 4v + 4v$

9) $68 = 3(4 - 3p) + 2$

10) $-197 = 6(-5a - 3) + 1$

11) $7 + 7x = 7x + 7$

12) $5(8 + x) = 24 + x$

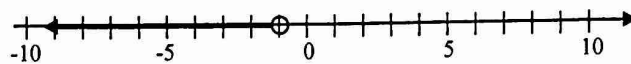
13. Which of the following inequalities is graphed below?

(1) $x < 2$

(3) $x < -1$

(2) $x \leq -1$

(4) $x > -1$



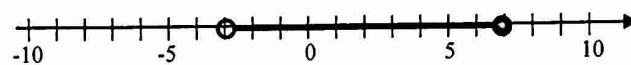
14. Which of the following inequalities is graphed below?

(1) $-3 < x \leq 7$

(3) $-3 \leq x \leq 7$

(2) $-3 \leq x < 7$

(4) $-3 < x < 7$



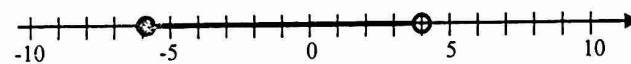
15. Which of the following values of x is *not* in the solution set graphed below?

(1) -5

(3) 0

(2) -6

(4) 4



Assignment

Date Day 5 Period _____

Simplify each expression.

1) $8p + 10p$

2) $4n + n$

3) $n - 5n$

4) $-6 - 3(3v + 5)$

5) $8 - 2(4p - 6)$

6) $2b - 2(b + 5)$

Solve each equation.

7) $3x - 5 - 3 = 7$

8) $-3 = -k - 2k$

9) $4 + 4(1 - 5n) = -72$

10) $-6(1 + 2a) = -66$

11) $-k - 6 = -14 - 2k$

12) $-(-m + 1) + 2 = -9 - m$

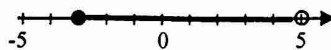
13. The set of numbers shown graphed below can be written using set builder notation as

(1) $\{x: -3 \leq x < 5\}$

(3) $\{x: x > -3\}$

(2) $\{x: -3 < x \leq 5\}$

(4) $\{x: x < 5\}$



14. If $A = \{2, 4, 6, 8, 10\}$ and $B = \{3, 4, 6, 10, 15\}$ then which of the following sets represents $A \cap B$?

(1) $\{2, 3, 4, 6, 8, 10, 15\}$

(3) $\{2, 4, 6, 8\}$

(2) $\{4, 6, 10\}$

(4) $\{2, 3, 8, 15\}$

15. If $A = \{1, 3, 5, 7, 9\}$ and $B = \{4, 5, 6, 7, 8\}$, then the intersection of sets A and B is

(1) $\{1, 3, 4, 5, 6, 7, 8, 9\}$

(2) $\{ \}$

(3) $\{5, 7\}$

(4) all real numbers

Assignment

Date Day 6 Period _____**Simplify each expression.**

1) $-5n + 9n$

2) $p + 9 - 5 + 10p$

3) $4x + 5x$

4) $7(3v - 8) - 4$

5) $-3 + 8(1 - 4r)$

6) $7(-8n - 4) + 2$

Solve each equation.

7) $-7 = -6n + 5 - 6n$

8) $6a + 2a = 0$

9) $80 = 4(2 - 3x)$

10) $-68 = 2(6v + 2)$

11) $1 + 6x - 7 = 3 + 3x$

12) $8(n - 4) + 3n = -11 + 4n$

Assignment

Date Day 7 Period _____**Simplify each expression.**

1) $-2a - 6a$

2) $1 - 9x - 1 - 2x$

3) $-8n - n$

4) $-3v - 3(5v + 2)$

5) $4(1 - 8n) - 3$

6) $-2n - 5(-1 + 2n)$

Solve each equation.

7) $4 = 5x - 3x$

8) $-1 = 2x + 3 + 2$

9) $-96 = 4(-3k - 6)$

10) $-1 - 3(-6n - 2) = -103$

11) $-6k - 6 = -4k - k$

12) $-32 + 8n = 7(1 + 3n)$

Assignment

Date Day 8 Period _____**Simplify each expression.**

1) $3a - 9 - 3$

2) $5a - 5a$

3) $4n + 9n$

4) $6(1 - 3m) - 2m$

5) $2x + 4(1 - 8x)$

6) $-8 - 8(6x - 1)$

Solve each equation.

7) $-8 = -x - 3 - 1$

8) $4x - 2 + 3x = 5$

9) $-3(2 - 5m) = -96$

10) $-156 = 6(1 + 4a) + 3a$

11) $3v - 9 = 1 - 2v$

12) $-(7v + 5) = -31 + 6v$

Assignment

Date Day 9 Period _____

Simplify each expression.

1) $7n + 5 + 9n + 5$

2) $p + 8 + 1 - 5p$

3) $n - 9n$

4) $1 + 7(7n + 3)$

5) $-2(n - 8) + n$

6) $4a + 4(a - 6)$

Solve each equation.

7) $4 = -5p - 6 - 5$

8) $5 = 1 - m - m$

9) $-84 = -6(3x - 4)$

10) $155 = 5(1 - 5k)$

11) $3v + 4 = 7v + 4$

12) $8(1 + n) - 1 = 18 - 3n$

Assignment

Date Day 10! Period _____**Simplify each expression.**

1) $10r - 7r$

2) $k + 4 - 9k$

3) $6p - 2p$

4) $-6v - 6(v - 1)$

5) $2(7r + 2) + 3$

6) $-2 - 8(-6x + 6)$

Solve each equation.

7) $-11 = 1 - 6n + 4n$

8) $x + 6 + 2 = 3$

9) $5(-5m + 4) = 70$

10) $2x - 5(3x - 2) = 62$

11) $7 + 3b - 4b = 1 + 3b - 2 - 4$

12) $-6(-6p + 6) = p + 34$

Answers to Assignment (ID: 1)

- | | | | |
|---------------|----------------|--------------|---------------|
| 1) $15a$ | 2) $2b$ | 3) $6x - 13$ | 4) $-28 - 3b$ |
| 5) $19x + 21$ | 6) $-24x - 20$ | 7) $\{0\}$ | 8) $\{6\}$ |
| 9) $\{5\}$ | 10) $\{-6\}$ | 11) $\{-8\}$ | 12) $\{1\}$ |
| Back 1. 3 | 2. 2 | 3. 4 | 4. 4 |
| 5. 3 | 6. 4 | 7. 2 | |

Answers to Assignment (ID: 2)

- | | | | |
|--------------|---------------|-------------|---------------|
| 1) $2 - 15p$ | 2) $-3v$ | 3) $2x - 1$ | 4) $-5x - 15$ |
| 5) $-m - 2$ | 6) $32m + 67$ | 7) $\{3\}$ | 8) $\{1\}$ |
| 9) $\{5\}$ | 10) $\{-6\}$ | 11) $\{2\}$ | 12) $\{-1\}$ |
| Back 1. 2 | 2. 4 | 3. 1 | 4. 1 |
| 5. 1 | 6. 3 | 7. 3 | 8. 1 |

Answers to Assignment (ID: 3)

- | | | | |
|---------------|---------------|--------------|---------------------|
| 1) $-3k$ | 2) $-8k$ | 3) $-7 - x$ | 4) $32 - 36k$ |
| 5) $48 + 25x$ | 6) $-22x - 4$ | 7) $\{1\}$ | 8) $\{-1\}$ |
| 9) $\{-5\}$ | 10) $\{6\}$ | 11) $\{-6\}$ | 12) $\{6\}$ |
| 13. 2 | 14. 4 | 15. 3 | 16. $4x - 25$ |
| 17. 4 | | | $5n + 40$ |
| | | | $\frac{80}{6x - 5}$ |

Answers to Assignment (ID: 4)

- | | | | |
|--------------|---------------|------------------------------------|---------------|
| 1) $-k$ | 2) $-15m$ | 3) $7p + 3$ | 4) $-1 + 10a$ |
| 5) $4 + 4n$ | 6) $-18b + 7$ | 7) $\{-3\}$ | 8) $\{2\}$ |
| 9) $\{-6\}$ | 10) $\{6\}$ | 11) $\{\text{All real numbers.}\}$ | |
| 12) $\{-4\}$ | 13. 1 | 14. 1 | 15. 4 |

Answers to Assignment (ID: 5)

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|--------------|-------------|--------------|---------------|
| 1) $18p$ | 2) $5n$ | 3) $-4n$ | 4) $-21 - 9v$ |
| 5) $20 - 8p$ | 6) -10 | 7) $\{5\}$ | 8) $\{1\}$ |
| 9) $\{4\}$ | 10) $\{5\}$ | 11) $\{-8\}$ | 12) $\{-5\}$ |
| 13. 1 | 14. 2 | 15. 3 | |

Answers to Assignment (ID: 6)

- | | | | |
|--------------|----------------|-------------|---------------|
| 1) $4n$ | 2) $11p + 4$ | 3) $9x$ | 4) $21v - 60$ |
| 5) $5 - 32r$ | 6) $-56n - 26$ | 7) $\{1\}$ | 8) $\{0\}$ |
| 9) $\{-6\}$ | 10) $\{-6\}$ | 11) $\{3\}$ | 12) $\{3\}$ |

Answers to Assignment (ID: 7)

- | | | | |
|--------------|---------------|--------------|---------------|
| 1) $-8a$ | 2) $-11x$ | 3) $-9n$ | 4) $-18v - 6$ |
| 5) $1 - 32n$ | 6) $-12n + 5$ | 7) $\{2\}$ | 8) $\{-3\}$ |
| 9) $\{6\}$ | 10) $\{-6\}$ | 11) $\{-6\}$ | 12) $\{-3\}$ |

Answers to Assignment (ID: 8)

- | | | | |
|---------------|--------------|-------------|--------------|
| 1) $3a - 12$ | 2) 0 | 3) $13n$ | 4) $6 - 20m$ |
| 5) $-30x + 4$ | 6) $-48x$ | 7) $\{4\}$ | 8) $\{1\}$ |
| 9) $\{-6\}$ | 10) $\{-6\}$ | 11) $\{2\}$ | 12) $\{2\}$ |

Answers to Assignment (ID: 9)

- | | | | |
|---------------|--------------|-------------|---------------|
| 1) $16n + 10$ | 2) $-4p + 9$ | 3) $-8n$ | 4) $22 + 49n$ |
| 5) $-n + 16$ | 6) $8a - 24$ | 7) $\{-3\}$ | 8) $\{-2\}$ |
| 9) $\{6\}$ | 10) $\{-6\}$ | 11) $\{0\}$ | 12) $\{1\}$ |

Answers to Assignment (ID: 10)

- | | | | |
|--------------|----------------|-------------|---------------|
| 1) $3r$ | 2) $-8k + 4$ | 3) $4p$ | 4) $-12v + 6$ |
| 5) $14r + 7$ | 6) $-50 + 48x$ | 7) $\{6\}$ | 8) $\{-5\}$ |
| 9) $\{-2\}$ | 10) $\{-4\}$ | 11) $\{3\}$ | 12) $\{2\}$ |