Lesson Menu

Five-Minute Check (over Lesson 1–1)

CCSS

Then/Now

New Vocabulary

Key Concept: Real Numbers

Example 1: Classify Numbers

Concept Summary: Real Number Properties

Example 2: Name Properties of Real Numbers

Example 3: Additive and Multiplicative Inverses

Example 4: Real-World Example: Distributive Property

Example 5: Simplify an Expression

5-Minute Check

CheckPoint

1 **Evaluate the expression *cdf* if *c* = 0.4, *d* = –5, and *f* = 6.**

A. **–30**

B. **–12**

C. **–2**

D. **2.4**

5-Minute Check

Over Lesson 1–1

CheckPoint

2 Evaluate the expression 2(a + b) – 5w if a = –3, b = 2, and w = –1.

A.3

B.5

C.–5

D.–7

EXIT MENU

5-Minute Check

Over Lesson 1–1

CheckPoint

Standardized Test Practice

3 **Evaluate the expression $a(b - c)^2 + d$ if $a = -4$, $b = 3$, $c = 6$, and $d = 5$.**

A. –319

B. –41

C. –31

D. 41

EXIT MENU

Content Standards

A.SSE.2 Use the structure of an expression to identify ways to rewrite it.

Mathematical Practices

2 Reason abstractly and quantitatively.

7 Look for and make use of structure.

Then

You identified and used the arithmetic properties of real numbers.

Now

- Classify real numbers.

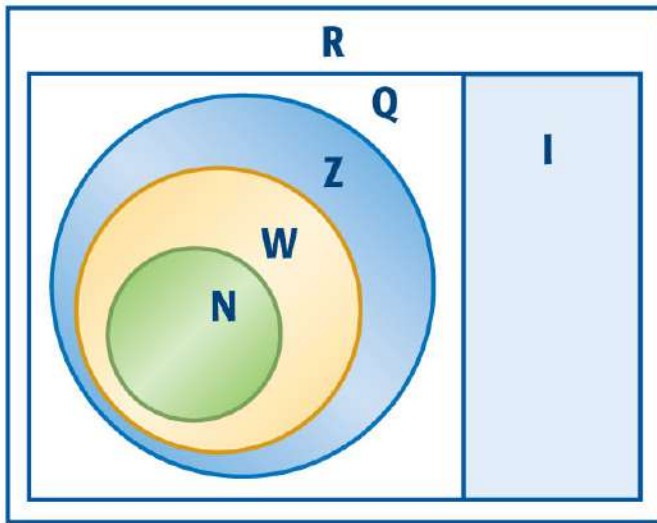- Use the properties of real numbers to evaluate expressions.

New Vocabulary

- real numbers

- rational numbers

- irrational numbers

- integers

- whole numbers

- natural numbers

KeyConcept Real Numbers (R)

Letter	Set	Examples
Q	rationals	$0.125, -\frac{7}{8}, \frac{2}{3} = 0.66\ldots$
I	irrationals	$\pi = 3.14159\ldots$ $\sqrt{3} = 1.73205\ldots$
Z	integers	$-5, 17, -23, 8$
W	wholes	$2, 96, 0, \sqrt{36}$
N	naturals	$3, 17, 6, 86$

EXIT   MENU

EXAMPLE 1

Classify Numbers

A. **Name the sets of numbers to which $\sqrt{6}$ belongs.**

Answer: irrationals (I) and reals (R)

EXAMPLE 1

Classify Numbers

B. **Name the sets of numbers to which 5 belongs.**

Answer: naturals (N), wholes (W), integers (Z), rationals (Q), reals (R)

EXAMPLE 1

Classify Numbers

C. Name the sets of numbers to which $-\dfrac{2}{3}$ belongs.

Answer: rationals (Q) and reals (R)

EXAMPLE 1 ✅ **Check Your Progress** ✅ **Check**Point

A. **The number** $\dfrac{3}{5}$ **belongs to which sets?**

A. **irrationals (I) and reals (R)**

B. **rationals (Q) and reals (R)**

C. **naturals (N), wholes (W), integers (Z), rationals (Q), and reals (R)**

D. **none of the above**

EXIT MENU

EXAMPLE 1 | ✔ Check Your Progress | ✔CheckPoint

B. The number $-2.\overline{52}$ belongs to which sets?

A. irrationals (I) and reals (R)

B. rationals (Q) and reals (R)

C. naturals (N), wholes (W), integers (Z), rationals (Q) and reals (R)

D. none of the above

LESSON

EXAMPLE 1   ✓ **Check Your Progress**   ✓ **Check**Point

C. **The number $\sqrt{5}$ belongs to which sets?**

○

A.irrationals (I) and reals (R)

B.rationals (Q) and reals (R)

C.naturals (N), wholes (W), integers (Z), rationals (Q) and reals (R)

D.none of the above

ConceptSummary **Real Number Properties**

For any real numbers a, b, and c:

Property	Addition	Multiplication
Commutative	$a + b = b + a$	$a \cdot b = b \cdot a$
Associative	$(a + b) + c = a + (b + c)$	$(a \cdot b) \cdot c = a \cdot (b \cdot c)$
Identity	$a + 0 = a = 0 + a$	$a \cdot 1 = a = 1 \cdot a$
Inverse	$a + (-a) = 0 = (-a) + a$	$a \cdot \frac{1}{a} = 1 = \frac{1}{a} \cdot a, a \neq 0$
Closure	$a + b$ is a real number.	$a \cdot b$ is a real number.
Distributive	$a(b + c) = ab + ac$ and $(b + c)a = ba + ca$	

EXAMPLE 2

Name Properties of Real Numbers

Name the property illustrated by (–8 + 8) + 15 = 0 + 15.

The Additive Inverse Property says that a number plus its opposite is 0.

Answer: Additive Inverse Property

EXAMPLE 2   ✅ **Check Your Progress**   ✔**CheckPoint**

What is the property illustrated by 3 + 0 = 3?

A. **Distributive Property**

B. **Additive Inverse Property**

C. **Identity Property of Addition**

D. **Inverse Property of Multiplication**

EXIT   MENU

EXAMPLE 3   **Additive and Multiplicative Inverses**

Find the additive inverse and multiplicative inverse for –7.

Since –7 + 7 = 0, the additive inverse of –7 is 7.

Since $(-7)\left(-\dfrac{1}{7}\right) = 1$, the multiplicative inverse

of -7 is $-\dfrac{1}{7}$.

Answer: The additive inverse is 7, and the multiplicative

inverse is $-\dfrac{1}{7}$.

EXAMPLE 3 ✓ Check Your Progress ✓ CheckPoint

What is the additive inverse and multiplicative inverse for the number 5?

A. additive: **B.** additive: –5
$\frac{1}{5}$

mult: –5 mult: $\frac{1}{5}$

C. additive: 5 **D.** additive: –5

mult: mult $-\frac{1}{5}$ $-\frac{1}{5}$

EXIT MENU

Real-World Example 4   Distributive Property

POSTAGE Audrey went to a post office and bought eight 42¢ stamps and eight 27¢ postcard stamps. What was the total amount of money Audrey spent on stamps?

There are two ways to find the total amount spent on stamps.

Method 1 Multiply, then add.

Multiply the price of each type of stamp by 8 and then add.

$S = 8(0.42) + 8(0.27)$

$= 3.36 + 2.16$

$= 5.52$

Real-World Example 4

Distributive Property

Method 2 Add, then multiply.

Add the prices of both types of stamps and then multiply the total by 8.

$S = 8(0.42 + 0.27)$

$= 8(0.69)$

$= 5.52$

Answer: Audrey spent a total of $5.52 on stamps. Notice that both methods result in the same answer.

Real-World Example 4 ✓ **Check Your Progress** ✓ **Check Point**

CHOCOLATE Joel went to the grocery store and bought 3 plain chocolate candy bars for $0.69 each and 3 chocolate-peanut butter candy bars for $0.79 each. How much did Joel spend altogether on candy bars?

A. $2.86

B. $4.44

C. $4.48

D. $7.48

EXIT   MENU

EXAMPLE 5

Simplify an Expression

Simplify 4(3a – b) + 2(b + 3a).

4(3a – b) + 2(b + 3a)

=4(3a) – 4(b) + 2(b) + 2(3a)Distributive Property

=12a – 4b + 2b + 6aMultiply.

=12a + 6a – 4b + 2bCommutative Property (+)

=(12 + 6)a + (–4 + 2)bDistributive Property

=18a – 2bSimplify.

Answer: 18a – 2b

EXAMPLE 5 ✔ **Check Your Progress** **CheckPoint**

Which expression is equivalent to 2(3x – y) + 4(2x + 3y)?

A. 14x + 10y

B. 14x + 2y

C. 14x + y

D. 11x + 2y

Glencoe
ALGEBRA 2

McGraw Hill

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Lesson Menu

Assignment for Section 1.2

Pages 14 – 16

#'s 18 - 34 Even, 38 - 42 Even, 53, 66, 67