* 1. **Real Numbers and the Number Line**
* A number *a* is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a number *b* if .
  + What are some other examples?

|  |  |
| --- | --- |
| 1. \_\_\_\_\_\_ 2. \_\_\_\_\_\_ | 1. \_\_\_\_\_\_ 2. \_\_\_\_\_\_ |

* \_\_\_\_\_\_\_\_\_\_\_ the expression under the radical symbol.

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* \_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_ = radical
* The square of an integer is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Ex. The perfect square of 7 is \_\_\_\_ because

* A set is a \_\_\_\_\_\_\_\_\_\_\_\_ collection of objects.

Ex.

|  |  |
| --- | --- |
| 1. {2, 4, 6, 8, 10,...} 2. {1, 3, 5, 7, 9, 11,...} | 1. { } 2. { } |

* A \_\_\_\_\_\_\_\_\_ of a set consists of elements from a given set.

Ex. { \_\_, \_\_, \_\_ } is the subset of { \_\_, \_\_, \_\_, \_\_, \_\_, \_\_}

* Each object in the set is called the \_\_\_\_\_\_\_\_ of the set.
* Whole numbers are also referred to as the \_\_\_\_\_\_\_\_\_ numbers.

Ex. {0, 1, 2, 3, 4, 5, 6, 7, 10,... }

Label the number line below with the whole numbers.

-4 -3 -2 -1 0 1 2 3 4 5 6

* Natural numbers are any positive \_\_\_\_\_\_\_\_\_ number.

Ex. {1, 2, 3, 4, 5, 6, 7,... }

Circle the whole numbers

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | -9 |  |  | 0 | 1.333... |  | 150 |

* Integers are any \_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_ whole numbers.

A number is not an integer when \_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_.

Circle the integers

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | -1.528 |  |  | 0 | 1.333... |  | 10 |
|  |  |  |  |  |  |  |  |

* Rational numbers are numbers that can be written \_\_\_\_\_ \_\_ form.

where *a* and *b* are integers and *b* 0

A rational number is decimal form is either \_\_\_\_\_\_\_\_\_\_\_\_ decimal such as 5.45 or a \_\_\_\_\_\_\_\_\_\_\_ decimal such as 0.3333...

* Irrational Numbers \_\_\_\_\_\_\_\_\_ be represented as the quotient of two integers.

Ex.

* \_\_\_\_\_\_\_ numbers are any numbers.

-5 -4.5 -4 -3 -2 -1 0 -.25 1 2 2.333... 3 4 5

The Real Number System

* 1. **Real Numbers and the Number Line**
* A number *a* is a **square root** of a number *b* if .
  + What are some other examples?

|  |  |
| --- | --- |
| 1. **7 is the square root of 49** 2. **6 is the square root of 36** | 1. **8 is the square root of 64** 2. **10 is the square root if 100** |

* **Radicand** the expression under the radical symbol.

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* **Radical Symbol**  + **Radicand** = radical
* The square of an integer is called a perfect square.

Ex. The perfect square of 7 is **49** because

* A set is a **well defined**  collection of objects.

Ex.

|  |  |
| --- | --- |
| 1. {2, 4, 6, 8, 10,...} 2. {1, 3, 5, 7, 9, 11,...} | 1. {**5, 10, 15, 20, 25, ...**} 2. {**10, 20, 30, 40, 50, ...**} |

* A **subsets** of a set consists of elements from a given set.

Ex. { **2**, **4**, **6** } is the subset of {**1, 2, 3, 4, 5, 6, 7,...**}

* Each object in the set is called the **element** of the set.
* Whole numbers are also referred to as the **counting** numbers.

Ex. {0, 1, 2, 3, 4, 5, 6, 7, 10,... }

Label the number line below with the whole numbers.

-4 -3 -2 -1 0 1 2 3 4 5 6

* Natural numbers are any positive **whole** number.

Ex. {1, 2, 3, 4, 5, 6, 7,... }

Circle the natural numbers

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | -9 |  |  | 0 | 1.333... |  | 150 |

* Integers are any **negative** or **positive** whole numbers.

A number is not an integer when it is in **decimal** or **fraction** form.

Circle the integers

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| -1 | -1.528 |  |  | 0 | 1.333... |  | 10 |
|  |  |  |  |  |  |  |  |

* Rational numbers are numbers that can be written in **fraction** form.

**a**

where *a* and *b* are integers and *b* 0

**b**

A rational number is decimal form is either **terminating** decimal such as 5.45 or a **repeating** decimal such as 0.3333...

* Irrational Numbers **cannot** be represented as the quotient of two integers.

Ex.

* **Real** numbers are any numbers.

-5 -4.5 -4 -3 -2 -1 0 -.25 1 2 2.333... 3 4 5

The Real Number System

Rational

Irrational

Natural Numbers

Whole Numbers

Integers