

Learning Targets

Pythagorean Theorem and Irrational Numbers

Lesson 1: The Areas of Squares and Their Side Lengths

- I can find the area of a tilted square on a grid by using methods like “decompose and rearrange” and “surround and subtract.”
- I can find the area of a triangle.

Lesson 2: Side Lengths and Areas

- I can explain what a square root is.
- If I know the area of a square, I can express its side length using square root notation.
- I understand the meaning of expressions like $\sqrt{25}$ and $\sqrt{3}$.

Lesson 3: Rational and Irrational Numbers

- I know what an irrational number is and can give an example.
- I know what a rational number is and can give an example.

Lesson 4: Square Roots on the Number Line

- I can find a decimal approximation for square roots.
- I can plot square roots on the number line.

Lesson 5: Reasoning About Square Roots

- When I have a square root, I can reason about which two whole numbers it is between.

Lesson 6: Finding Side Lengths of Triangles

- I can explain what the Pythagorean Theorem says.

Lesson 7: A Proof of the Pythagorean Theorem

- I can explain why the Pythagorean Theorem is true.

Lesson 8: Finding Unknown Side Lengths

- If I know the lengths of two sides, I can find the length of the third side in a right triangle.
- When I have a right triangle, I can identify which side is the hypotenuse and which sides are the legs.

Lesson 9: The Converse

- I can explain why it is true that if the side lengths of a triangle satisfy the equation $a^2 + b^2 = c^2$ then it must be a right triangle.
- If I know the side lengths of a triangle, I can determine if it is a right triangle or not.

Lesson 10: Applications of the Pythagorean Theorem

- I can use the Pythagorean Theorem to solve problems.

Lesson 11: Finding Distances in the Coordinate Plane

- I can find the distance between two points in the coordinate plane.
- I can find the length of a diagonal line segment in the coordinate plane.

Lesson 12: Edge Lengths and Volumes

- I can approximate cube roots.
- I know what a cube root is.
- I understand the meaning of expressions like $\sqrt[3]{5}$.

Lesson 13: Cube Roots

- When I have a cube root, I can reason about which two whole numbers it is between.

Lesson 14: Decimal Representations of Rational Numbers

- I can write a fraction as a repeating decimal.
- I understand that every number has a decimal expansion.

Lesson 15: Infinite Decimal Expansions

- I can write a repeating decimal as a fraction.
- I understand that every number has a decimal expansion.

Lesson 16: When Is the Same Size Not the Same Size?

- I can apply what I have learned about the Pythagorean Theorem to solve a more complicated problem.
- I can decide what information I need to know to be able to solve a real-world problem using the Pythagorean Theorem.