Vocabulary Review Sheet

Lesson – Square Roots and Fairness in Housing

How to Use

- Review these words before your quiz.

- Read each **definition**, then connect it to the **math example**, **real-life example**, and **fairness example**.

- Think about how square roots help compare housing space fairly across different communities.

- Keep this page in your *Equity in Numbers Student Journal* for ongoing reference.

Square Root

- **Definition:** The number that, when multiplied by itself, equals the given number.

- **Math Examples:**

    o $\sqrt{900} = 30$ → 30 × 30 = 900

    o $\sqrt{400} = 20$ → 20 × 20 = 400

    o $\sqrt{1,600} = 40$ → 40 × 40 = 1,600

- **Real-Life Example:** A 900 sq ft lot has sides of 30 ft each.

- **Fairness Example:** Square roots help compare home sizes so communities can see who has less or more living space.

Area

- **Definition:** The total space inside a shape, measured in square units.

- **Math Examples:**

    o 30 × 30 = 900 sq ft

    o 40 × 40 = 1,600 sq ft

    o 20 × 20 = 400 sq ft

- **Real-Life Example:** Area tells how much ground a family's home and yard cover.

- **Fairness Example:** Comparing areas shows differences in housing opportunities between communities.

Side Length

- **Definition:** The measurement of one edge of a square or rectangular lot.

- **Math Examples:**

  - $\sqrt{900}$ = 30 ft   side length = 30

  - $\sqrt{400}$ = 20 ft   side length = 20

  - $\sqrt{2,500}$ = 50 ft   side length = 50

- **Real-Life Example:** Builders use side length to plan houses that fit available land.

- **Fairness Example:** Some neighborhoods have shorter side lengths and smaller yards, showing unequal access to outdoor space.

Compare

- **Definition:** To look at two or more values to see which is greater, smaller, or equal.

- **Math Examples:**

  - 40 ft > 30 ft > 20 ft

  - 1,600 sq ft > 900 sq ft > 400 sq ft

  - 50 ft − 20 ft = 30 ft difference

- **Real-Life Example:** Comparing lot sizes shows which communities have more space per family.

- **Fairness Example:** Comparison reveals housing inequalities and helps identify where fairer development is needed.

Community

- **Definition:** A group of people living in the same area or neighborhood.

- **Math Examples:**

    - Community A → $\sqrt{900}$ = 30 ft

    - Community B → $\sqrt{1{,}600}$ = 40 ft

    - Community C → $\sqrt{400}$ = 20 ft

- **Real-Life Example:** Different communities may have different average home sizes.

- **Fairness Example:** Fair housing means each community has safe, adequate space regardless of income or background.

Housing Equity

- **Definition:** Fair access to affordable and adequate living space for all families.

- **Math Examples:**

    - 30 ft lots vs 40 ft lots → difference = 10 ft

    - 20 ft lots require 50% more space to match 30 ft lots.

    - 900 sq ft vs 1,600 sq ft → 700 sq ft gap

- **Real-Life Example:** Some families live in smaller or overcrowded homes due to income differences.

- **Fairness Example:** Housing equity means reducing these gaps so all families have enough living and outdoor space.

Root Symbol ($\sqrt{\ }$)

- **Definition:** A symbol that shows the square root operation, meaning "what number times itself equals this number."

- **Math Examples:**

    - $\sqrt{900}$ = 30

    - $\sqrt{1{,}600}$ = 40

    - $\sqrt{2{,}500}$ = 50

- **Real-Life Example:** Architects use the √ symbol to find side lengths when drawing square lots.

- **Fairness Example:** The √ symbol reminds us that fairness starts with measuring space accurately for every family.

Difference

- **Definition:** The amount one number or measurement is greater or smaller than another.

- **Math Examples:**

  - 40 ft − 30 ft = 10 ft

  - 50 ft − 20 ft = 30 ft

  - 1,600 − 900 = 700 sq ft

- **Real-Life Example:** The difference between 30-ft and 40-ft lots shows more yard space.

- **Fairness Example:** Understanding differences helps leaders design policies to close space and resource gaps.

Fairness

- **Definition:** Treating people equitably so everyone has access to safe and comfortable housing.

- **Math Examples:**

  - Small lot → $\sqrt{400}$ = 20 ft needs extra space to match $\sqrt{900}$ = 30 ft.

  - Equalizing areas creates fair housing distribution.

  - Expanding 20 ft to 30 ft increases lot by $(30^2 − 20^2)$ = 500 sq ft.

- **Real-Life Example:** Families with less property space may have limited play areas or gardens.

- **Fairness Example:** Using math to reveal size differences encourages fair city planning and equal housing opportunities.

Summary of Math + Fairness Connections

Concept	Math Focus	Fairness Connection
Square Root	Finds side length from area	Measures fair space between homes
Compare	Identifies differences	Reveals housing inequalities
Community	Represents shared space	Emphasizes neighborhood fairness
Difference	Calculates gaps	Guides equitable planning
Fairness	Uses data to balance resources	Promotes housing equity for all