9.2 Solving Single-Step Inequalities

Explore Mathematical Operations and Linear Inequalities

The following notes provide guidelines to help you adapt the Explore Mathematical Operations and Linear Inequalities section from *MathLinks 9*.

- Use the Warm Up to review opposite operations.
- Students may benefit from doing this exercise as a teacher-led activity.
- You may wish to pair weaker students with stronger partners.
- Draw a number line from –20 to +20 on an 11 × 17 sheet of paper or a long strip of paper.

Examples

- Review the meaning of *isolate*, *verify*, and *solution*.

Working Example 1:

- Post the rules for multiplying and dividing by a negative number.
- Remind students to align their inequality signs when solving questions. This will help them keep the left side separate from the right side.

Working Example 2:

- Discuss why substituting 0 is a simple number to use when checking if the inequality sign is correct. Zero is an easy number to use for calculation: any number multiplied by 0 is 0; 0 added to a number or subtracted from a number always leaves that number.
- Encourage students to explain their answers to word problems using words related to inequalities.

Communicate the Ideas, Practise, and Apply

- Distribute **BLM 9–2 Number Lines** to help students with #1 and #5.
- Remind students to align their inequality signs when solving inequalities.
- Review how to change a percent to a decimal number.
- Students may benefit by doing #11 and #12 with a partner.
- Provide students who need additional practice with **BLM 9–4 Section 9.2 Extra Practice**.

Math Link

- Read and discuss each question.
- Point out the difference between a single-ride ticket and an all-day pass.
- Encourage students to choose a whole-dollar price for the tickets or pass.
- Review how to change words to algebra using inequality symbols.

Common Errors

- Some students may have difficulty solving equations with the variable on the right side of the inequality sign. For example, $15 > 2x$.

R$_x$ Remind students that $3 < 5$ is the same as $5 > 3$, so they can rewrite the equation by reversing the inequality sign and switching the two sides.