

Reasoning with Equation and Inequalities - Worksheet 3

Answer Key

Solve the following inequalities:

1. $\sqrt{x+3} > x+3$

$$-3 < x < -2.$$

2. $\frac{mx^2}{x-2} = x+1$

$$x = \frac{1 \pm \sqrt{9-8m}}{2-2m}.$$

3. $\frac{x+6}{t} \geq t-4$

$$x \leq t^2 - 4t - 6.$$

4. $|x+1| < 4x$

$$-\frac{1}{5} < x < \frac{1}{3}.$$

5. $\frac{mx+m}{x^2-1} = \frac{2}{m+1}$

$$x = \frac{m^2+m+2}{2}.$$

6. $-3x > p+4$

$$x < \frac{p+4}{-3}.$$

7. $x^3 + x^2 - 6x > 0$

$$-3 < x < 0 \text{ and } x > 2.$$

8. $x^2 < x$

$$0 < x < 1.$$

9. $4x = sx + 6 + s1$

$$x = \frac{5+s}{4-s}.$$

10. $|x-4| < 3x+1$

$$x > \frac{3}{4}$$

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