5.4 Solving Rational Equations

Math Learning Target:

"I can state the restrictions on the variable in any rational equation. Then, I can solve the equation both algebraically and graphically. Finally, I can construct (and solve) a rational equation that arises from a real application."

Ex. 1: Solve $\{x \in \mathbb{R}\}$. $\frac{1}{3x} - \frac{1}{2} = \frac{5}{6x}$

Ex. 2

a) Determine a function whose zeros are the solutions to:

$$\frac{5}{4} = \frac{1}{x} - \frac{1}{x-5}$$

b) Solve for the zeros algebraically $\{x \in \mathbb{R}\}$. Check your solution

$$\frac{5}{4} = \frac{1}{x} - \frac{1}{x-5}$$

Entertainment:
pp. 285-287 #3b, 4b (do not "verify"), 5c, 6abc, **9, 11 (see Example 4, text), **12
Challenge: #16 (use desmos).
Answer for #16a) should be: at 0.417 sec and 1.705 sec.

Legend:
** final answers must be stated as simplified exact values (not rounded!)