

5.3.D5 ~ SOLVING RATIONAL EQUATIONS

Past due on: _____ Period _____

Solve each rational equation. Check for extraneous solutions.

1. $\frac{6}{5x} + \frac{x-3}{x} = \frac{1}{5x}$

2. $\frac{2}{3x^2} + \frac{x+2}{x^2} = \frac{1}{3x}$

3. $\frac{1}{x-6} + \frac{2}{x+4} = \frac{2x+2}{x^2-2x-24}$

4. $\frac{2x-8}{x^2-5x} + \frac{x+2}{3x^2-15x} = \frac{5}{3x-15}$

5. $\frac{5x+35}{4x^2+3x} = \frac{1}{8x+6} + \frac{1}{x}$

6. $\frac{x+9}{4x-32} + \frac{1}{4} = \frac{1}{4x^2-32x}$

7. $\frac{4}{x-1} = \frac{x-1}{x+5} + 1$

8. $\frac{1}{x-1} + \frac{x+3}{x^3-5x^2+4x} = \frac{1}{x}$

SHOW ALL WORK ON A SEPARATE SHEET OF PAPER.

Problems 9 – 15, set up and solve a rational equation that represents each situation.

9. Jason, an experienced shipping clerk, can fill a certain order in 5 hours. Jessica, a new clerk, needs 9 hours to do the same job. Working together, how long will it take them to fill the order?
10. Alexander can paint a room in 4 hours. Alexandria can paint the same room in 3 hours. Working together, how long will it take them to paint the room?
11. An in-ground backyard pool can be filled in 12 hours if water enters through a pipe alone, or in 30 hours if water enters through a hose alone. If water is entering through both the pipe and the hose, how long will it take to fill the pool?
12. One printing press can print an order of advertising brochures in 4.5 hours. Another press can do the same job in 5.5 hours. How long will it take if both presses are used?
13. Juan can paint the neighbor's house four times as fast as Ariel. The year they worked together, it took them 8 days. How long would it take each to paint the house alone?
14. Jon took a drive to town at an average rate of 40 mph. In the evening, he drove back at 30 mph. If he spent a total of 7 hours traveling, what is the total distance Jon traveled?

	DIST.	RATE	TIME
THERE			
BACK			

15. A trip between two towns takes 4 hours under ideal conditions. The first 150 miles of the trip is on the interstate, and the last 130 miles is on a highway with a speed limit that is 10 miles per hour less than on the interstate. Find the speed limits on the two highways.

	DIST.	RATE	TIME
INTERSTATE			
HIGHWAY			