

Algebra 1 Practice Questions for Chapter 11 Rational Expressions and Equations

1. $\frac{y^2 - 4y + 4}{3y} \cdot \frac{9y^4}{5y - 10}$

2. $\frac{15x^3}{8xy} \div \frac{10x^2y}{4y^2}$

3. $\frac{x^2 - 4x - 5}{x^2 - 4x + 4} \div \frac{x^2 - 2x - 15}{x^2 + 4x - 12}$

4. $\frac{x^2 + 6x}{x^2 + 12x + 36} \cdot \frac{x^2 + 7x + 6}{x^2 - 1}$

5. $\frac{5x^2 - 11x + 2}{x^2 + 8x + 16} \div \frac{10x^2 + 13x - 3}{x^2 + 10x + 24}$

6. $\frac{6x + 3}{2x - 3} \div \frac{3x^2 - 12x - 15}{2x^2 - x - 3}$

7. $\frac{5}{t + 4} + \frac{3}{t - 4}$

8. $\frac{6}{y^2} + \frac{3}{4y} - \frac{2}{5y}$

9. $\frac{1}{x + 1} + \frac{x}{x - 6} - \frac{5x - 2}{x^2 - 5x - 6}$

10. $\frac{x}{4} + \frac{x}{5} = 3$

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

12. $\frac{x + 2}{x - 3} = \frac{x + 1}{x + 5}$

13. $\frac{2x}{x + 2} - 5 = \frac{7x}{x + 2}$

14. John could do a gardening job in 3 hours. Selena can do the same job in 5 hours. If they work together, how much time would it take them together?

Review:

15. Solve and graph on number line: $3(2x-1)-(5-3x) < 5-2x$

16. Find the vertex, x-intercepts, and y-intercept of $y = x^2 - 8x + 12$

17. Write an equation of a line that is parallel to $y = \frac{2}{3}x + 1$ and contains the point (6, -3).

18. Solve the system by graphing: $y > 2x$
 $4x - y > 8$

19. Solve system: $y = 4x - 5$
 $2x - 3y = 35$

20. Simplify: $(3x-7)^2$

21. Simplify: $(x+5)(3x-2)$

22. Simplify: $\frac{(2x^4)^3(3y^2)^2}{12x^5y^7}$

23. Use quadratic formula to get zeros:

$$3x^2 - 6x = 2$$

24. Factor: $3g^3 + 12g^2 + 9g$

25. Find the slope between (4, 2) and (-5, -2).