

Semester 2 Extra Practice #3

Simplify.

1. $\frac{6y^2+7y+2}{6y^2+5y+1}$

2. $\frac{c^2+2c-8}{c^4-20c^2+64}$

3. $\frac{7xy^3}{11z^2} \cdot \frac{44z^3}{21x^2y}$

4. $\frac{x^2-x-6}{9-x^2} \cdot \frac{x^2+7x+12}{x^2+4x+4}$

5. $\frac{x^2+x-2}{x^2+5x+6} \div \frac{x^2+2x-3}{x^2+7x+12}$

6. $\frac{x^2+2x-15}{x^2-x-30} \div \frac{x^2-3x-18}{x^2-2x-24}$

7. $\frac{x^2+5x+6}{x^2-x-12} \cdot \frac{x-4}{x^2+11x+18} \div \frac{x+7}{x^2+14x+45}$

8. $\frac{12n}{3n-2} - \frac{8}{3n-2}$

9. $\frac{y}{y^2-2y+1} - \frac{1}{y-1}$

10. $\frac{5}{3x-9} + \frac{3}{x-3}$

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

12. $\frac{3m}{m^2+3m+2} - \frac{3m-6}{m^2+4m+4}$

13. $\frac{\frac{x^2+8x+15}{x^2+x-6}}{\frac{x^2+2x-15}{x^2-2x-3}}$

14. Solve $\frac{x-4}{4} + \frac{x}{3} = 6$

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

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Answers:

1. $\frac{3y+2}{3y+1}$; $x \neq \frac{-1}{2}, \frac{-1}{3}$
2. $\frac{1}{(c+2)(c-4)}$; $c \neq \pm 4, \pm 2$
3. $\frac{4y^2z}{3x}$
4. $-\frac{x+4}{x+2}$; $x \neq \pm 3, -2$
5. $\frac{x+4}{x+3}$; $x \neq -2, -3, -4, 1$
6. $\frac{(x+4)(x-3)}{(x-6)(x+3)}$; $x \neq -3, -4, -5, 6$
7. $\frac{x+5}{x+7}$; $x \neq -2, -3, -5, -7, -9, 4$
8. 4 ; $n \neq \frac{2}{3}$
9. $\frac{1}{(y-1)^2}$; $y \neq 1$
10. $\frac{14}{3(x-3)}$; $x \neq 3$
11. $\frac{x^2+6x-11}{(x-3)(x+1)}$; $x \neq -1, 3$
12. $\frac{9m+6}{(m+2)^2(m+1)}$; $m \neq -2, -1$
13. $\frac{x+1}{x-2}$; $x \neq -5, -3, -1, 2, 3$
14. $x = 12$
15. $x = \frac{-3}{7}$; $x \neq 0, 1$

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