2-5 HW Answer Key

1. 1
2. 6
3. $\frac{3}{2}$
4. -y
5. $\frac{3}{4(x+1)}$
6. $\frac{3(x+2)}{2x^2}$
7. $\frac{3(x-4)}{2x}$
8. $\frac{5x}{x^2+13x+42} = \frac{5x}{(x+6)(x+7)}$

$\frac{x(x+6)}{1}\cdot\frac{5}{x+6}$ $\quad\frac{5x}{7x+42+x^2+6x}$

$\frac{x(x+6)}{1}\cdot\frac{7}{x} + \frac{1}{1}\cdot\frac{x(x+6)}{1}$

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Alg 2 Homework 2-5

Name Key (2016)

Solve the following equations.

1. $\frac{4x}{x-2} - \frac{13}{3x-6} = \frac{1}{3}$ $\quad 3(x-2)$

$x \neq 2$

$12x - 13 = x - 2$

$11x = 11$

$x = 1$

$\{1\}$

2. $\frac{x}{2x+8} + \frac{1}{x+4} = \frac{16}{x^2-16}$ $\quad 2(x+4)(x-4)$

$x \neq \pm 4$

$x(x-4) + 2(x+4) = 32$

$x^2 - 4x + 2x + 8 = 32$

$x^2 - 2x - 24 = 0$

$(x-6)(x+4) = 0$

$x = 6 \mid x = -4$ reject

$\{6\}$

Simplify the following fractions.

3. $\frac{\frac{x}{3}(9)}{\frac{2x}{9}(9)} = \frac{3x}{2x} = \frac{3}{2}$

4. $\frac{(8y)1 - \frac{y}{8}(8y)}{(8y)\frac{1}{8} - \frac{1}{y}(8y)} = \frac{8y - y^2}{y - 8} = \frac{y(8-y)}{y-8} = -y$

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5. $\dfrac{\frac{x}{x+1}}{x+\frac{x}{2}}\left(\dfrac{3(x+1)}{3(x+1)}\right) = \dfrac{3x}{3x(x+1)+x(x+1)}$

$= \dfrac{3x}{3x^2+3x+x^2+x}$

$= \dfrac{3x}{4x^2+4x} = \dfrac{3}{4x+4}$

6. $\dfrac{\frac{2}{x}+\frac{1}{x}}{\frac{2x}{x+2}} = \dfrac{x+2}{2x}\left(\dfrac{\frac{3}{x}}{\frac{2}{1}}\right) = \dfrac{3x+6}{2x^2}$

$= \dfrac{3(x+2)}{2x^2}$

7. $\dfrac{\frac{3}{2x}}{\frac{1}{x-4}} = (x-4)\left(\dfrac{3}{2x}\right)$

$= \dfrac{3(x-4)}{2x}$

$= \dfrac{3x-12}{2x}$

8. $\dfrac{\frac{5}{x+6}}{\frac{7}{x}+1}\,x(x+6) = \dfrac{5x}{7x+42+x^2+6x}$

$= \dfrac{5x}{x^2+13x+42}$

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Review Activity Answer Key (Yesterday's)

1. $\frac{2}{3}, x \neq 0, -5$

2. $-(x-4)$ or $-x+4$

3. $\frac{(x+1)}{(x+4)}$

4. $\frac{-2x^2+3x+6}{(x-9)(x+2)}$

5. $\frac{2x^2+7x+4}{(x-4)(x+3)}$

6. x^2+3

7. {8}

8. { } or $\varnothing$

9. $\frac{(x)(x+5)}{(x+4)}, x \neq \pm 4$

   b) also $x \neq 0$

(Work in yesterday's file)

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2-7 (Review) HW Answer Key

1. $\frac{x}{(x-2)}, x \neq 2$

2. $\frac{8x}{(x-2)}, x \neq 0, 2$

3. $\frac{x}{(x-2)}, x \neq 1, 2$

4. $\frac{(x+2)}{(x)(x+1)}$

5. $\frac{-1}{(2x+1)}$

6. $\frac{(x+7)}{(x-2)}$

7. -2

8. $\frac{(2x-5)}{x}$

9. 4

10. $\frac{4x+3}{(x)(x-3)}$

11. $\frac{1}{(y+3)}$

12. 3

13. {4}

14. {6, 3}

15. { } or $\varnothing$

16. {2}

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Alg 2 Homework 2-7 (Review) Name Key (2016)

Simplify and identify any x-values for which the expression is undefined.

1. $\frac{x}{x-2}$ $x \neq 2$

2. $\frac{16x^3}{2x^2-4x}$ $\frac{16x^2}{2x(x-2)} = \frac{8x}{x-2}$ $x \neq 0, 2$

3. $\frac{4x^2-4x}{4x^2-12x+8}$ $\frac{4x(x-1)}{(4x-8)(x-1)} = \frac{4x(x-1)}{4(x-2)(x-1)} = \frac{x}{x-2}$ $x \neq 1, 2$

Multiply or divide. Simplify if possible.

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

5. $\frac{2x-7}{2x^2-5x-3} \cdot \frac{3x-9}{21-6x}$ $\frac{-1(2x-7)}{(x-3)(2x+1)} \cdot \frac{3(x-3)}{3(7-2x)} = \frac{-1}{2x+1}$

6. $\frac{x^2+5x+6}{x^2-2x-15} \div \frac{x^2+2x-35}{x^2+2x-35}$ $\frac{(x+2)(x+3)}{(x-5)(x+3)} \cdot \frac{(x+7)(x-5)}{(x+7)(x-2)}$ $\frac{x+7}{x-2}$

7. $\frac{x^2-9}{9-3x} \div \frac{x^2+7x+12}{6x+24}$ $\frac{(x+3)(x-3)}{3(3-x)} \cdot \frac{2 \cdot 3(x+4)}{(x+4)(x+3)} = -2$

Add or subtract. Simplify if possible.

8. $\frac{10+5x}{5x} + \frac{x-7}{x}\left(\frac{5}{5}\right)$ $\frac{10+5x}{5x} + \frac{5x-35}{5x}$ $\frac{10x-25}{5x} = \frac{5(2x-5)}{5x}$ $\frac{2x-5}{x}$

9. $\frac{4a}{a-3} + \frac{12}{3-a}\left(\frac{-1}{-1}\right)$ $\frac{4a-12}{a-3}$ $\frac{4(a-3)}{a-3}$ 4

10. $\frac{\left(\frac{x}{x}\right)5}{x-3} - \frac{1}{x}\left(\frac{x-3}{x-3}\right)$ $\frac{5x}{x(x-3)} - \frac{x-3}{x(x-3)}$ $\frac{4x+3}{x(x-3)}$

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Simplify the following complex fractions.

11. $\frac{\left(\frac{3}{7}\right)\frac{y}{3}-1\left(\frac{3}{1}\right)}{\left(\frac{3}{1}\right)\frac{y^2}{3}-3\left(\frac{3}{1}\right)}$ $\frac{y-3}{y^2-9} = \frac{y-3}{(y-3)(y+3)}$ $\frac{1}{y+3}$

12. $\frac{\left(\frac{10}{1}\right)\frac{3a}{10}+\frac{6}{5}\left(\frac{10}{1}\right)}{\left(\frac{10}{1}\right)\frac{2}{5}+\frac{a}{10}\left(\frac{10}{1}\right)} = \frac{3a+12}{4+a} = \frac{3(a+4)}{4+a} = 3$

Solve.

13. $\frac{7x}{3x+2} = \frac{2}{1}$ $7x = 6x+4$ $x = 4$ $\{4\}$

14. $\frac{x-9}{1} = \frac{-18}{x}$ $x \neq 0$ $x^2-9x = -18$ $x^2-9x+18 = 0$ $(x-6)(x-3) = 0$ $x-6=0$ $x=6$ | $x-3=0$ $x=3$ $\{3,6\}$

15. $\left(\frac{x-3}{1}\right)\frac{6x}{x-3} = \frac{4x+6}{x-3}\left(\frac{x-3}{1}\right)$ $x \neq 3$ $6x = 4x+6$ $2x = 6$ $x = 3$ reject $\{\}$

16. $\frac{1}{x} + \frac{1}{3x} = \frac{2}{3}$ $x \neq 0$ $\left(\frac{3x}{1}\right)\frac{1}{x} + \left(\frac{3x}{1}\right)\left(\frac{1}{3x}\right) = \left(\frac{3x}{1}\right)\left(\frac{2}{3}\right)$ $3+1 = 2x$ $4 = 2x$ $2 = x$ $\{2\}$

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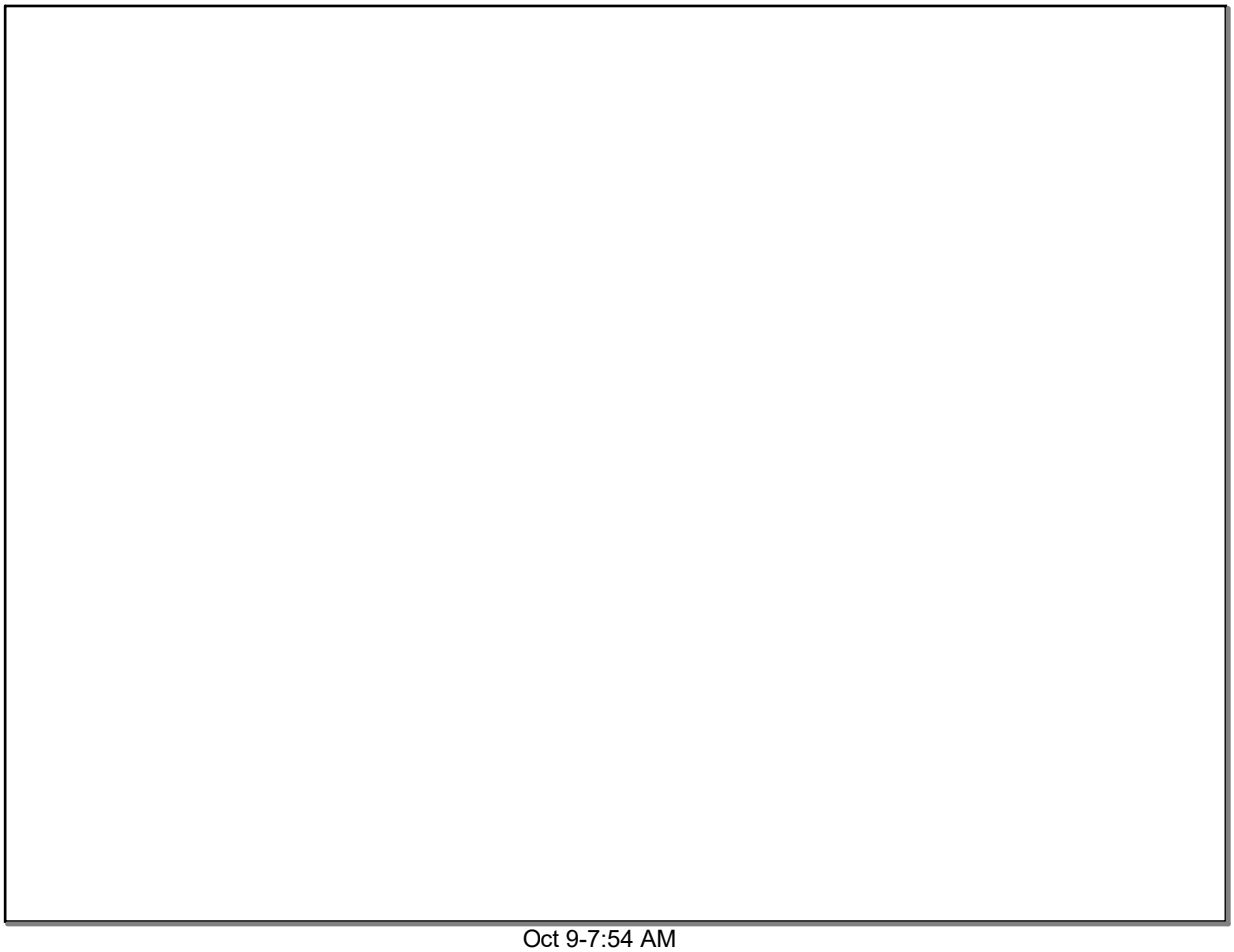

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