Worksheet Day with Guided Help

Scroll through the pages to find example problems from today's worksheet

Solving Rational Functions: Wks 1

Date_____ Period____

Solve each equation. Remember to check for extraneous solutions.

1) $\frac{1}{x} + \frac{4x-12}{x} = 1$

2) $\frac{2}{x} = \frac{1}{3x} + \frac{x-4}{3x}$

3) $\frac{n+5}{n^2} = \frac{1}{3n} - \frac{1}{n}$

4) $\frac{2}{x} = \frac{x+6}{5x} + \frac{1}{5x}$

Name_____

Simplify Rational Functions: Wks 1

Date_____ Period____

Simplify each expression.

1) $\frac{a-6b}{24ab} - \frac{a-4b}{24ab}$

2) $\frac{2}{20n^2} + \frac{m-3n}{20n^2}$

$\frac{2+m-3n}{20n^2}$

3) $\frac{x-2y}{15y^3x} + \frac{x+5y}{15y^3x}$

4) $\frac{x+5y}{15x} + \frac{x+6y}{15x}$

1) $\frac{(a-6b)}{24ab} - \frac{(a-4b)}{24ab}$

$\frac{(a-6b)-(a-4b)}{24ab}$

$\frac{a-6b-a+4b}{24ab}$

$\frac{-2b}{24ab}$

$\frac{-1}{12a}$

mistake

$\Rightarrow \frac{-6b-4b}{24ab}$

$\Rightarrow \frac{-10b}{24ab}$

$$8)\ \frac{4n}{4m^2n} + \frac{3n}{3mn^2}$$

3n, 1, 4, m, 4m

$4 \cdot m \cdot m \cdot n \cdot n \qquad 3 \cdot m \cdot n \cdot n \cdot m$

$12\ m^2 n^2 \qquad 12\ m^2 n^2$

Simplify

$$\frac{12n^2 + 12mn}{12m^2n^2}$$

$$\frac{n+m}{m^2n}$$

1 3 5 7 9 11

10 min

$1 \qquad 1$

$m^2 \qquad mn$

$\frac{mn+m}{m^2nm}$

$\frac{mn+m}{m^2n}$

Solve # 1, 3, 5, 7, 1

Fraction = Fract
? ?

$$\frac{12x+36}{18x} \cdot \frac{2x+6}{2(x+3)} = \frac{12(x+3)}{18(x)} = \frac{2}{3x}$$

1) $\frac{1}{x} + \frac{4x - 12}{x} = 1$

One Fraction

$\frac{1 + 4x - 12}{x}$

$\frac{4x - 11}{x} = \frac{1}{1}$

$4x - 11 = x$

$3x = 11$

$x = 11/3$

Simplify each expression.

1) $\frac{(a-6b)}{24ab} - \frac{(a-4b)}{24ab}$

mistake

$\frac{a-6b-a-4b}{24ab}$

$\frac{-10b}{24ab} = \frac{-5}{12a}$

$\frac{(a-6b)-(a-4b)}{24ab}$

$\frac{a-6b-a+4b}{24ab}$

$\frac{-2b}{24ab}$

$\frac{-2 \div 2}{24 \div 2}$

answer $\frac{-1}{12a}$

2) $\frac{2}{20n^2} + \frac{m-3n}{20n^2}$

same

$\frac{2+m-3n}{20n^2}$

$\frac{2}{20n^2} + \frac{m}{20n^2} - \frac{3n}{20n^2}$

8) $\frac{4n}{4m^2n} + \frac{3n}{3mn^2}$

$\frac{12mn^3 + 12m^2n^2}{12m^3n^3}$

FACTOR / GCF

$\frac{12mn^2(n+m)}{12m^3n^3}$

$\frac{n+m}{m^2n}$

8) $\frac{4n}{4m^2n} + \frac{3n}{3mn^2}$ $\quad 3n \cdot 4m \quad$ $4 \cdot m \cdot m \cdot n \quad 3 \cdot m \cdot n \cdot n$

$12m^2n^2 \quad 12m^2n^2$

$\frac{12n^2}{12m^2n^2} + \frac{12mn}{12m^2n^2}$ FACTOR

$\frac{12n^2 + 12mn}{12m^2n^2}$

$\frac{12n(n+m)}{12m^2n^2}$

$\frac{m+n}{m^2n}$

8) $\frac{4n}{4m^2n} + \frac{3n}{3mn^2}$

$n \cdot \frac{1}{n \cdot m^2} + \frac{1}{mn} \cdot \frac{m}{m}$

$n \cdot m \cdot m \quad m \cdot n \cdot m$

$\frac{n}{m^2n} + \frac{m}{m^2n}$

$\frac{n+m}{m^2n}$

Simplify #1, 3, 5, 7, 11

Solve #1, 3, 5, 7

1) $\frac{1}{x} + \frac{4x-12}{x} = 1$

$\frac{1+4x-12}{x} = \frac{1}{1}$

$\frac{4x-11}{x} = \frac{1}{1}$

$4x - 11 = x$

$3x = 11$

$x = 11/3$

Fraction = FRACTION

$\frac{\quad}{\quad} = \frac{\quad}{\quad}$

$\frac{(4x-11)}{x}$

$\frac{4x}{x} - \frac{11}{x}$

2) $\frac{2}{x} = \frac{1}{3x} + \frac{x-4}{3x}$

$\frac{2}{x} \cdot (x-3)$ $3x$

$2 \cdot 3x = x(x-3)$

$6x = x^2 - 3x$

$-6x \quad -6x$

$0 = x^2 - 9x$ Mistake

FACTOR

$0 = x(x-9)$

$x = 0 \quad x - 9 = 0$

$x = 9$

1) $\frac{(a-6b)}{24ab} - \frac{(a-4b)}{24ab}$

mistake

$\frac{a-6b-a-4b}{24ab}$

$\frac{-6b-4b}{24ab}$

$\frac{-10b}{24ab}$

$\frac{-5}{12a}$

$\frac{(a-6b)-(a-4b)}{24ab}$

$\frac{a-6b-a+4b}{24ab}$

$\frac{-2b}{24ab}$

$\frac{-2}{24a}$

answer

$\frac{-1}{12a}$

2) $\frac{2}{20n^2} + \frac{m-3n}{20n^2}$

Same answer

$\frac{2+m-3n}{20n^2}$

$\frac{2}{20n^2} + \frac{m}{20n^2} - \frac{3n}{20n^2}$

1, 3, 5, 7, 11

8) $\frac{4n}{4m^2n} + \frac{3n}{3mn^2}$

$3 \cdot n \cdot 4n$ $\quad$ $3n \cdot 4 \cdot m$

$3 \cdot n \cdot 4m^2n \quad 3mn^2 \cdot 4 \cdot m$

$4 \cdot m \cdot m \cdot n \quad 3 \cdot m \cdot n \cdot n$

$12m^2n^2 \quad 12m^2n^2$

$$\frac{12n^2 + 12nm}{12m^2n^2}$$

Factor

$$\frac{12n(n+m)}{12m^2n^2}$$

$$= \frac{n+m}{m^2n}$$

8) $\frac{4n}{4m^2n} \times \frac{3n}{3mn^2}$

$$\frac{12mn^3 + 12m^2n^2}{12m^3n^3}$$

FACTOR

$$\frac{12mn^2(n+m)}{12m^3n^3}$$

$$\frac{n+m}{m^2n}$$

8) $\frac{4n}{4m^2n} + \frac{3n}{3mn^2}$

$$\frac{1}{m^2} \times \frac{1}{mn}$$

$$\frac{mn + m^2}{m^3n}$$

FACTOR

$$\frac{m(n+m)}{m^3n}$$

$$\frac{n+m}{m^2n}$$

Simplify => 1, 3, 5, 7, 11

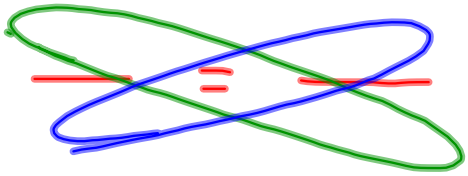
Solve => 1, 3, 5, 7

1) $\frac{1}{x} + \frac{4x-12}{x} = 1$

Goal:

Fraction = Fraction

1) $\frac{1}{x} + \frac{4x-12}{x} = 1$



$\frac{(4x-11)}{x} = \frac{1}{1}$

Solve

1

3

5

7

$4x - 11 = x$

$-4x \quad -4x$

$\frac{-11}{-3} = \frac{-3x}{-3}$

$\frac{11}{3} = x$

2) $\frac{2}{x} = \frac{1}{3x} + \frac{x-4}{3x}$

1) $\frac{a-6b}{24ab} - \frac{a-4b}{24ab}$

2) $\frac{2}{20n^2} + \frac{m-3n}{20n^2}$

8) $\frac{4n}{4m^2n} + \frac{3n}{3mn^2}$

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1) $\frac{1}{x} + \frac{4x - 12}{x} = 1$

2) $\frac{2}{x} = \frac{1}{3x} + \frac{x-4}{3x}$