

## 12.6 Rational Expressions with LIKE Denominators

### Adding & Subtracting

#### STEPS:

- 1) LCD
  - 2) Operations (Add or Subtract)
  - 3) Simplify, if possible
- CLT
- Multiply by -1 then Add

Add/Subtract each without using a calculator.

$$\frac{2}{7} + \frac{3}{7} = \boxed{\frac{5}{7}}$$

LCD: 7

$$\frac{5}{16} + \frac{3}{16} = \frac{8}{16} = \boxed{\frac{1}{2}}$$

LCD: 16

$$\frac{5}{8} - \frac{3}{8} = \frac{2}{8} = \boxed{\frac{1}{4}}$$

LCD: 8

$$\frac{3}{5} - \frac{1}{5} = \boxed{\frac{2}{5}}$$

LCD: 5

12.6 Adding & Subtracting Rational Expressions with Like Denominators with work

Find each sum.

$$\frac{4b}{15} + \frac{16b}{15} = \frac{20b}{15} \quad \begin{array}{l} \div 5 \\ \div 5 \end{array}$$

LCD: 15

$$= \boxed{\frac{4b}{3}}$$

$$\frac{6c}{c+2} + \frac{12}{c+2} = \frac{6c+12}{c+2} \quad \begin{array}{l} \text{GCF} \\ \div 6 \end{array}$$

LCD:  $c+2$

$$= \frac{6(c+2)}{(c+2)}$$

$c \neq -2$

$$= \boxed{6}$$

Find the difference.

$$\frac{3s}{11-s} + \frac{5s}{s-11}$$

$-s+11 \quad -s+11$

LCD:  $-s+11$

$$= \boxed{\frac{(8s)}{(-s+11)}}$$

$$\frac{7x+9}{x-3} + \frac{-x+5}{x-3} = \frac{7x+9-x+5}{x-3}$$

$\text{GCF} \div 2$

LCD:  $x-3$

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

$$= \boxed{\frac{2(3x+7)}{x-3}}$$

## 12.6 Adding & Subtracting Rational Expressions with Like Denominators with work

$$\frac{6a-4}{2a+2} + \frac{-4a+6}{2a+2}$$

LCD:  $2a+2$

$$= \frac{6a-4-4a+6}{2a+2}$$

$$= \frac{\cancel{(2a+2)}}{\cancel{(2a+2)}} = \frac{\cancel{2}(a+1)}{\cancel{2}(a+1)} = \boxed{1}$$

Tell me the difference between adding and subtracting fractions with like denominators.

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12.6 WS

A) 1 - 11 (o), 15 - 24 (M3), 25, 26

B) odds

C) 1 - 4, 9 - 12, 13 - 15, 22 - 24