## Climb The Ladder A

Multiply \& Divide Rational Expressions
$\begin{aligned} \frac{\left(-2 a b^{2}\right)^{3}}{20 a b^{4}} & \text { 2. } \frac{8 y^{2}\left(y^{6}\right)^{3}}{4 y^{24}} \\ & -\frac{2 \boldsymbol{a}^{2} \boldsymbol{b}^{2}}{5}\end{aligned} \frac{\mathbf{2}}{\boldsymbol{y}^{4}}$
3. $\frac{24 g^{3}}{5 f^{2}} \cdot \frac{10(g f)^{3}}{8 g^{5} f}$
4. $\frac{5 r^{2}}{r^{2}-4} \cdot \frac{r+2}{10 r^{5}}$
$6 g$

$$
\frac{1}{2 r^{3}(r-2)}
$$

## Climb The Ladder A

Multiply \& Divide Rational Expressions

1. $\begin{array}{lll}\frac{\left(-2 a b^{2}\right)^{3}}{20 a b^{4}} & \text { 2. } \frac{8 y^{2}\left(y^{6}\right)^{3}}{4 y^{24}} & \frac{2}{y^{4}}\end{array}$
2. $\frac{24 g^{3}}{5 f^{2}} \cdot \frac{10(g f)^{3}}{8 g^{5} f}$
3. $\frac{5 r^{2}}{r^{2}-4} \cdot \frac{r+2}{10 r^{5}}$
$6 g$

$$
\frac{1}{2 r^{3}(r-2)}
$$

## Climb The Ladder B

Multiply \& Divide Rational Expressions

1. $\frac{3 m^{3}-3 m}{6 m^{4}} \cdot \frac{4 m^{5}}{m+1}$

$$
2 m^{2}(m-1)
$$

2. $\frac{x^{2}+x-6}{x^{2}-6 x-27}$
3. $\frac{4 x^{2}-12 x+9}{9-6 x}$

$$
\frac{3-2 x}{3}
$$

4. $\frac{3 a^{2}-24 a}{3 a^{2}+12 a}$

## Climb The Ladder B

Multiply \& Divide Rational Expressions
2. $\frac{x^{2}+x-6}{x^{2}-6 x-27}$

$$
2 m^{2}(m-1)
$$

$$
\frac{x-2}{x-9}
$$

3. $\frac{4 x^{2}-12 x+9}{9-6 x}$
$\frac{3-2 x}{3}$
4. $\frac{3 a^{2}-24 a}{3 a^{2}+12 a}$

$$
\frac{a-8}{a+4}
$$

## Climb The Ladder C

|  | Multiply \& Divide Rational Expressions |  |  |  |
| :--- | :--- | :--- | :--- | :---: |
| 1. $\frac{\frac{c^{2} y}{2 d^{2}}}{\frac{-c^{6}}{5 d}}$ | $-\frac{5 y}{2 \boldsymbol{c}^{4} \boldsymbol{d}}$ | 2. $\frac{\frac{a^{2}-b^{2}}{4 a}}{\frac{a+b}{2 a}}$ | $\frac{(\boldsymbol{a}-\boldsymbol{b})}{2}$ |  |

3. $\begin{array}{r}\frac{x^{2}-5 x+4}{2 x-8} \div\left(3 x^{2}-3 x\right) \\ \frac{1}{6 x}\end{array}$
4. $\frac{16 a^{2}+40 a+25}{3 a^{2}-10 a-8} \div \frac{4 a+5}{a^{2}-8 a+16}$

$$
\frac{(4 a+5)(a-4)}{3 a+2}
$$

## Climb The Ladder C

Multiply \& Divide Rational Expressions

1. $\frac{\frac{c^{2} y}{2 d^{2}}}{\frac{-c^{6}}{5 d}}-\frac{5 y}{2 \mathbf{c}^{4} \boldsymbol{d}} \quad$ 2. $\frac{\frac{a^{2}-b^{2}}{4 a}}{\frac{a+b}{2 a}} \quad \frac{(\mathbf{a}-\boldsymbol{b})}{2}$
2. $\frac{x^{2}-5 x+4}{2 x-8} \div\left(3 x^{2}-3 x\right)$
3. $\frac{16 a^{2}+40 a+25}{3 a^{2}-10 a-8} \div \frac{4 a+5}{a^{2}-8 a+16}$
$\frac{1}{6 x}$
$\frac{(4 a+5)(a-4)}{3 a+2}$

## Climb The Ladder D

Find the LCM of each set of polynomials.

1. $14 a b^{2}, 42 b c^{3}, 18 a^{2} c$ $126 a^{2} b^{2} c^{3}$
2. $8 c d f^{3}, 28 c^{2} f, 35 d^{4} f^{2}$
$280 c^{2} d^{4} f^{3}$
3. $22 x^{2}+66 x-220,4 x^{2}-16$

$$
44(x-2)(x+2)(x+5)
$$

## Climb The Ladder D

Find the LCM of each set of polynomials.

1. $14 a b^{2}, 42 b c^{3}, 18 a^{2} c$
$126 a^{2} b^{2} c^{3}$
2. $8 c d f^{3}, 28 c^{2} f, 35 d^{4} f^{2}$
$280 c^{2} d^{4} f^{3}$
3. $x^{2}+3 x, 10 x^{2}+25 x-15$
4. $22 x^{2}+66 x-220,4 x^{2}-16$
$5 x(x+3)(2 x-1)$

$$
44(x-2)(x+2)(x+5)
$$

## Climb The Ladder E

T8-2: I can add and subtract rational expressions.

1. $\frac{3}{x}+\frac{5}{y}$ $\frac{5 x+3 y}{x y}$
2. $\frac{3}{8 p^{2} r}+\frac{5}{4 p^{2} r} \quad \frac{13}{8 p^{2} r}$
3. $\frac{2}{a+2}-\frac{3}{2 a}$

$$
\frac{a-6}{2 a(a+2)}
$$

4. $\frac{5}{3 b+d}-\frac{2}{3 b d}$

$$
\frac{15 b d-6 b-2 d}{3 b d(3 b+d)}
$$

## Climb The Ladder E

T8-2: I can add and subtract rational expressions.
2. $\frac{3}{x}+\frac{5}{y} \quad \frac{5 x+3 y}{x y}$
2. $\frac{3}{8 p^{2} r}+\frac{5}{4 p^{2} r}$
$\frac{13}{8 p^{2} r}$
4. $\frac{2}{a+2}-\frac{3}{2 a}$
4. $\frac{5}{3 b+d}-\frac{2}{3 b d}$

$$
\frac{a-6}{2 a(a+2)}
$$

$\frac{15 b d-6 b-2 d}{3 b d(3 b+d)}$

## Climb the Ladder F

T8-2: I can add and subtract rational expressions.

1. $\frac{4 z}{z-4}+\frac{z+4}{z+1}$

$$
\frac{5 z^{2}+4 z-16}{(z-4)(z+1)}
$$

2. $\frac{1}{x^{2}+2 x+1}+\frac{x}{x+1} \quad \mathbf{X}^{2}+\mathbf{X}+\mathbf{1}$

$$
(x+1)^{2}
$$

3. $\frac{n}{n-3}+\frac{2 n+2}{n^{2}-2 n-3}$
4. $\frac{3 t}{2-x}+\frac{5}{x-2}$

$$
\frac{n+2}{n-3}
$$

$$
\frac{5-3 t}{x-2}
$$

## Climb the Ladder F

T8-2: I can add and subtract rational expressions.

1. $\frac{4 z}{z-4}+\frac{z+4}{z+1}$

$$
\frac{5 z^{2}+4 z-16}{(z-4)(z+1)}
$$

2. $\frac{1}{x^{2}+2 x+1}+\frac{x}{x+1} \frac{\mathbf{X}^{2}+\mathbf{X}+1}{(\mathbf{X}+1)^{2}}$
3. $\frac{n}{n-3}+\frac{2 n+2}{n^{2}-2 n-3}$

$$
\frac{n+2}{n-3}
$$

4. $\frac{3 t}{2-x}+\frac{5}{x-2}$
$\frac{5-3 t}{x-2}$

## Climb the Ladder G

T8-3 I can solve rational equations.
1.

$$
\begin{gathered}
\frac{2 y}{3}-\frac{y+3}{6}=2 \\
5
\end{gathered}
$$

3. $\frac{3 m+2}{5 m}+\frac{2 m-1}{2 m}=4$

$$
-\frac{1}{24}
$$

4. $\frac{4}{x-1}=\frac{x+1}{12}$
$-\frac{13}{5}$
5. $\frac{2 x+1}{3}-\frac{x-5}{4}=\frac{1}{2}$

## Climb the Ladder G

T8-3 I can solve rational equations.
1.

$$
\begin{gathered}
\frac{2 y}{3}-\frac{y+3}{6}=2 \\
5
\end{gathered}
$$

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

$$
-\frac{13}{5}
$$

3. $\frac{3 m+2}{5 m}+\frac{2 m-1}{2 m}=4$

$$
-\frac{1}{24}
$$

$\pm 7$

## Climb the Ladder H

T8-3 I can solve rational equations.

1. $8-\frac{4}{z}=\frac{8 z-8}{z+2}$
2. $\frac{1}{w+2}+\frac{1}{w-2}=\frac{4}{w^{2}-4}$

$$
\frac{2}{5}
$$

$\varnothing$
3. $\frac{-12}{y}=y-7$

$$
3,4
$$

4. $\frac{c+1}{c-3}=4-\frac{12}{c^{2}-2 c-3}-\frac{5}{3}, 5$

## Climb the Ladder H

T8-3 I can solve rational equations.

1. $8-\frac{4}{z}=\frac{8 z-8}{z+2}$
2. $\frac{1}{w+2}+\frac{1}{w-2}=\frac{4}{w^{2}-4}$
$\frac{2}{5}$
3. $\frac{-12}{y}=y-7$

3, 4
4. $\frac{c+1}{c-3}=4-\frac{12}{c^{2}-2 c-3}-\frac{5}{3}, 5$

