Adding and subtracting algebraic fractions

1

Write as a single fraction $\frac{x}{2} + \frac{x}{5}$

cut both bars into 10 equal pieces



make the denominators the same

$$\frac{x \times 5}{2 \times 5} + \frac{x \times \square}{5 \times \square}$$

now add or subtract the numerators

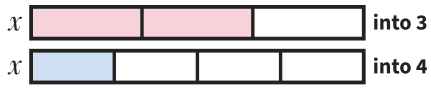
$$= \frac{\square + \square}{\square}$$

Answer _____

2

Write as a single fraction $\frac{2x}{3} + \frac{x}{4}$

cut both bars into 12 equal pieces



make the denominators the same

$$\frac{2x \times \square}{3 \times \square} + \frac{x \times \square}{4 \times \square}$$

now add or subtract the numerators

$$= \frac{\square + \square}{\square}$$

Answer _____

3

Write as a single fraction $\frac{3x}{5} - \frac{x}{4}$

make the denominators the same

$$\frac{3x \times \square}{5 \times \square} - \frac{x \times \square}{4 \times \square}$$

now add or subtract the numerators

$$= \frac{\square - \square}{\square}$$

Answer _____

4

Write as a single fraction

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

make the denominators the same

$$\frac{(x+2) \times \square}{3 \times \square} + \frac{(x-1) \times \square}{4 \times \square}$$

now add or subtract the numerators

$$= \frac{\square}{\square}$$

expand and collect the numerator

$$= \frac{\square}{\square}$$

Answer _____

5

Write as a single fraction

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

$$\frac{(2x+1) \times \square}{3 \times \square} - \frac{(x-4) \times \square}{5 \times \square}$$

$$= \frac{\square}{\square}$$

$$= \frac{\square}{\square}$$

Answer _____

6

Write as a single fraction

$\frac{2}{x+1} + \frac{5}{x+3}$

make the denominators the same

$$\frac{2 \times \square}{(x+1) \times \square} + \frac{5 \times \square}{(x+3) \times \square}$$

now add or subtract the numerators

$$= \frac{\square + \square}{\square}$$

expand and collect the numerator

$$= \frac{\square}{\square}$$

Answer _____

7

Write as a single fraction

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

Answer _____

8

Leah writes $\frac{x}{4} + \frac{x}{6} = \frac{2x}{10}$. Put $x = 12$ into both sides to show she is wrong.

Then write the right answer.

Answer _____

Adding and subtracting algebraic fractions *further practice*

9

Write as a single fraction

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

Answer _____

10

Write as a single fraction $\frac{5}{x} + \frac{2}{x-3}$

Answer _____

11

A rectangle is $\frac{x}{3}$ cm long and $\frac{x+2}{4}$ cm wide. Write its perimeter as a single fraction.

Answer _____

12

Show that $\frac{x+1}{2} - \frac{x-1}{3} = \frac{x+5}{6}$

Answer _____

13

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

Answer _____

14

Find the mean of $\frac{x}{2}$ and $\frac{x+4}{3}$.

Write it as a single fraction.

Answer _____

15

Ravi writes $\frac{5}{x+1} - \frac{2}{x-3}$ as $\frac{5x-15-2x+2}{(x+1)(x-3)}$. Find his mistake and write the right answer.

Answer _____

16

Solve $\frac{2}{x} + \frac{6}{x+3} = 1$

Answer _____