Add two algebraic fractions with integer denominators

Miss Davies
Maths

Add algebraic fractions

1. Work out and simplify.

a) $\frac{a}{7} + \frac{3a}{7}$

b) $\frac{2x + b}{10} + \frac{3b}{10}$

c) $\frac{2y^2 + 4}{40} + \frac{y^2 + 7}{40}$

d) $\frac{3z^2 + 01}{t} + \frac{3z + 5}{t}$

2. Emily is working out

$$\frac{2y + 1}{8} + \frac{y + 7}{2}$$

Here is her working out.

$$\frac{2y + 1}{8} + \frac{y + 7}{2} = \frac{2y + 1}{8} + \frac{4y + 7}{8}$$

$$= \frac{6y + 8}{8}$$

What mistake has she made?

What is the correct answer?

Add algebraic fractions

3. Work out and simplify fully.

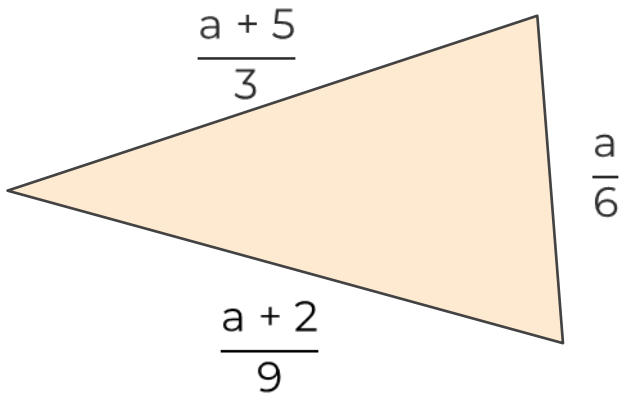
a) $\frac{10a + 2}{10} + \frac{3a}{5}$

b) $\frac{6 + b}{4} + \frac{3b}{20}$

c) $\frac{y^2 + 4}{10} + \frac{y^2 + 7}{100}$

d) $\frac{6z + 10}{x} + \frac{3z - 5}{2x}$

4. Calculate the perimeter of the triangle.



Answers

Add algebraic fractions

1. Work out and simplify.

a) $\frac{a}{7} + \frac{3a}{7} = \frac{4a}{7}$

b) $\frac{2x + b}{10} + \frac{3b}{10} = \frac{2x + 4b}{10}$

c) $\frac{2y^2 + 4}{40} + \frac{y^2 + 7}{40} = \frac{3y^2 + 11}{40}$

d) $\frac{3z^2 + 10}{t} + \frac{3z + 5}{t} = \frac{3z^2 + 3z + 15}{t}$

2. Emily is working out

$$\frac{2y + 1}{8} + \frac{y + 7}{2}$$

Here is her working out.

$$\frac{2y + 1}{8} + \frac{y + 7}{2} = \frac{2y + 1}{8} + \frac{4y + 7}{8}$$

$$= \frac{6y + 8}{8}$$

What mistake has she made?

She has not multiplied the 7 by 4.

What is the correct answer? $\frac{6y + 29}{8}$

Add algebraic fractions

3. Work out and simplify fully.

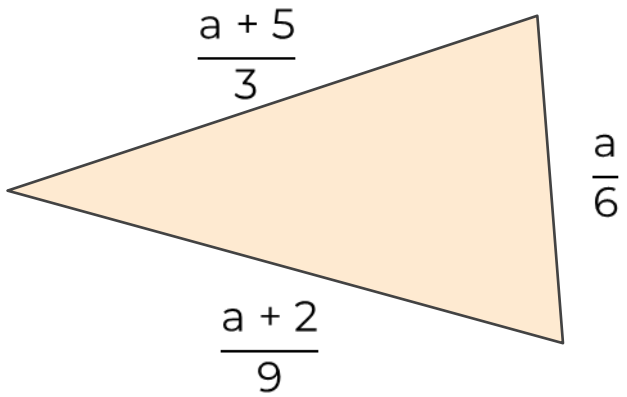
a) $\frac{10a + 2}{10} + \frac{3a}{5} = \frac{16a + 2}{10}$

b) $\frac{6 + b}{4} + \frac{3b}{20} = \frac{8b + 30}{10}$

c) $\frac{y^2 + 4}{10} + \frac{y^2 + 7}{100} = \frac{11y^2 + 47}{100}$

d) $\frac{6z + 10}{x} + \frac{3z - 5}{2x} = \frac{15z + 15}{2x}$

4. Calculate the perimeter of the triangle.



$\frac{9a + 34}{18}$