



2.9 – Algebraic fractions

Student name: _____ Score: _____

1. Simplify fully $\frac{3a}{a^2-9} \div \frac{a}{a-3}$.

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

..... [3]

2. Write $\frac{3}{x+2} - \frac{5}{2x+3}$ as a single fraction in its simplest form.

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

..... [3]

3. Write $1 - \frac{1}{x-1}$ as a single fraction.

$$\frac{x-2}{x-1}$$

..... [2]

4. Write as a single fraction, simplifying your answer.

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

$$\frac{8x-19}{(2x-3)(x-5)}$$

..... [3]

5. Simplify $\frac{3y-y^2}{9-y^2}$.

$$\frac{y}{3+y}$$

..... [2]

6. Simplify fully.

$$\frac{3t-t^2}{9-t^2}$$

$$\frac{t}{3+t}$$

..... [3]

7. Write as a single fraction in its simplest form.

$$\frac{n+1}{n-1} - \frac{n-1}{n+1}$$

$$\frac{4n}{n^2-1}$$

..... [4]

8. Simplify.

$$\frac{y^2-9}{xy+3x}$$

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

..... [3]

9. Simplify.

$$\frac{3-a}{3p-6t-ap+2at}$$

$$\frac{1}{p-2t}$$

..... [3]

10. Write as a single fraction in its simplest form.

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

$$\frac{6-x}{x(x-3)}$$

..... [3]

11. Simplify $\frac{x^2y-3xy}{x^2-2x-3}$.

$$\frac{xy}{x+1}$$

..... [3]

12. Write as a single fraction in its simplest form.

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

$$\frac{7-x}{x-2}$$

..... [2]

13. Simplify.

$$\frac{x^2-x}{x^2-1}$$

$$\frac{x}{x+1}$$

..... [3]

14. Write as a single fraction in its simplest form.

$$\frac{7}{x-1} - \frac{5}{2x+3}$$

$$\frac{9x+26}{(x-1)(2x+3)}$$

..... [3]

15. Simplify $\frac{ab-ac+2b-2c}{a^2-4}$.

$$\frac{b-c}{a-2}$$

..... [4]

16. Simplify fully.

$$\frac{5x}{12} \times \frac{4}{15x}$$

$$\frac{1}{9}$$

..... [2]

17. Simplify.

$$\frac{3x-6y-ax+2ay}{x^3-2x^2y}$$

$$\frac{3-a}{x^4}$$

..... [4]



18. Simplify.

$$\frac{w^2 - 9}{2w^2 + 5w - 3}$$

$$\frac{w - 3}{2w - 1} \dots\dots\dots [4]$$

19. $\frac{2x-3}{2x+3} - \frac{2x+3}{2x-3} = \frac{ax}{bx^2 - c}$

Find the values of a , b and c .

$$a = \dots\dots\dots -24$$

$$b = \dots\dots\dots 4$$

$$c = \dots\dots\dots 9 \dots\dots\dots [4]$$

20. Simplify.

$$\frac{ax^2 + 5ax + bx + 5b}{x^2 - 25}$$

$$\frac{ax + b}{x - 5} \dots\dots\dots [3]$$

21. Simplify.

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

Write your answer as a single fraction in its simplest form.

$$\frac{5x - 8}{x - 2} \dots\dots\dots [3]$$