

1 (a) Simplify fully $\frac{10x^2 + 23x + 12}{4x^2 - 9}$

$$2^{2y} \times 2^{3y+2} = \frac{8^{5y}}{4^n}$$

.....
(3)

- (b) Find an expression for n in terms of y .
Show clear algebraic working and simplify your expression.

.....
(4)

(Total for Question 1 is 7 marks)

2 Express

$$\left(\frac{4}{2x-5} - \frac{3}{2x-3} \right) \div \frac{9x-4x^3}{6x^2-17x+5}$$

as a single fraction in its simplest form.

(Total for Question 2 is 4 marks)

3 Given that $x = \frac{5}{9y+5}$ and that $y = \frac{5}{5a-2}$

find an expression for x in terms of a .

Give your expression as a single fraction in its simplest form.

(Total for Question 3 is 4 marks)

4 (b) Write $\frac{2x+1}{4} + \frac{x-2}{3}$ as a single fraction in its simplest form.

.....
(3)

(Total for Question 4 is 3 marks)

5 Solve the equation

$$\frac{5}{x+2} + \frac{3}{x^2+2x} = 2$$

Show clear algebraic working.

.....

(Total for Question 5 is 5 marks)

6 (a) Express $\frac{4}{x-2} - \frac{3}{x+1}$ as a single fraction.

Give your answer in its simplest form.

.....
(3)

(Total for Question 6 is 3 marks)

7 (a) Solve $\frac{9a - 7}{5} - \frac{3a - 7}{4} = 4.55$

Show clear algebraic working.

$$a = \dots\dots\dots$$

(3)

(b) Make c the subject of the formula $p = \sqrt{\frac{ac + 8}{3 + c}}$

.....

(4)

(Total for Question 7 is 7 marks)

8 Write $\frac{25x^2 - 64}{5x^2 - 13x - 6} \times \frac{x^2 - 8x + 15}{5x + 8} - (x - 7)$

as a single fraction in its simplest form.
Show clear algebraic working.

.....

(Total for Question 8 is 4 marks)

9 Express $\left(\frac{20}{x^2 - 36} - \frac{2}{x - 6}\right) \times \frac{1}{4 - x}$ as a single fraction in its simplest form.

(Total for Question 9 is 3 marks)

10 Write

$$\frac{4x^2 - 17x - 15}{2x - 1} \times \frac{2x^2 - 7x + 3}{x^2 - 25} + (29 - 4x)$$

as a single fraction in its simplest form.

(Total for Question 10 is 4 marks)
