

Topic Test 1 (20 minutes)

Algebraic fractions - Higher

- 1 Add $\frac{2a}{b} + \frac{3b}{a}$
Circle your answer.

[1 mark]

$$\frac{6ab}{a+b}$$

$$\frac{2a+3b}{a+b}$$

$$\frac{2a^2+3b^2}{a+b}$$

$$\frac{2a^2+3b^2}{ab}$$

- 2 Subtract $\frac{3x}{2y} - \frac{5x}{4y}$
Circle your answer.

[1 mark]

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

$$\frac{xy}{2}$$

$$\frac{x}{4y}$$

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

- 3 Simplify fully $\frac{6de}{15de^2}$
Circle your answer.

[1 mark]

$$\frac{6e}{15}$$

$$\frac{6}{15e}$$

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

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

- 4 Simplify fully $\frac{2x}{y^2} \div \frac{x^2}{y}$
Circle your answer.

[1 mark]

$$\frac{2x}{y}$$

$$\frac{2}{xy}$$

$$\frac{2x^3}{y^3}$$

$$\frac{2}{xy^2}$$

5 Simplify fully $\frac{3x^2}{4y} \times \frac{8y^3}{6x^2}$

[1 mark]

Answer _____

6 A class is asked to simplify $\frac{9x^2 - y^2}{3x - y}$

This is Mya's answer

$$9x^2 \div 3x = 3x$$

$$-y^2 \div -y = +y$$

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

When the teacher read out the answer, Mya ticked her answer as correct.

Was she right to do so? If not explain her mistakes.

[2 marks]

7 (a) Factorise $x^2 - 16$

[1 mark]

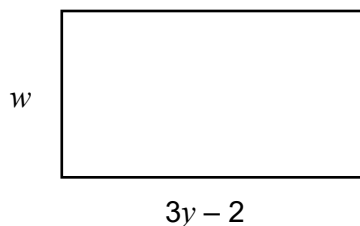
Answer _____

7 (b) Hence, simplify $\frac{x^2 - 16}{2x^2 - 5x - 12}$

[3 marks]

Answer _____

8 The area of this square is $(3y^2 + y - 2)$ cm²



Not drawn accurately

Work out an expression for the width w in terms of y .

[3 marks]

Answer _____

9 $\frac{ax^2 - b^2}{cx^2 + dx + e}$ simplifies to the expression $\frac{3x - 2}{4x - 1}$

Work out the values of a , b , c , d and e .

[2 marks]

$a =$ _____

$b =$ _____

$c =$ _____

$d =$ _____

$e =$ _____

10

Simplify

$$\frac{2x^2 - 9x - 5}{6x^2 + 11x + 4}$$

[4 marks]

Answer _____