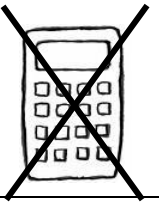
Name:	Teacher Assessment



Section A — Substitution — Grade F / E

1. (a) Find the value of $3x + 4y$

(i) when $x = 2$ and $y = 5$

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.....

Answer .....

(2)

(ii) when $x = 6$ and $y = -3$

.....

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Answer .....

(2)

(b) Find the value of $a^3 + b^2$ when $a = 2$ and $b = 5$

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Answer .....

(2)
(Total 6 marks)

2. If $x = 5$ and $y = -7$, find the value of

(a) $4x + 3y$

.....

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Answer.....

(2)

(b) $\frac{x - y}{4}$

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Answer.....

(2)
(Total 4 marks)

3. (a) Use the formula $a = 5b + 2c$ to work out a when $b = 3$ and $c = -4$

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Answer .....

(2)

(b) Use the formula $a = 5b + 2c$ to work out c when $a = 16$ and $b = 2$

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……

Answer .....

(3)
(Total 5 marks)

4. Here is a formula $P = 10(x - y)$

Find the value of P when

(a) $x = 8$ and $y = 2$

.....

Answer P = ...

(2)

(b) $x = 9.6$ and $y = 5.4$

.....

.....

.....

Answer P = ...

(2)
(Total 4 marks)

5. (a) Find the value of $4x - 3y$ when $x = 5$ and $y = -6$

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Answer .....

(2)

(b) Find the value of $\frac{x}{y}$ when $x = 30$ and $y = -2$

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Answer .....

(2)

(Total 4 marks)

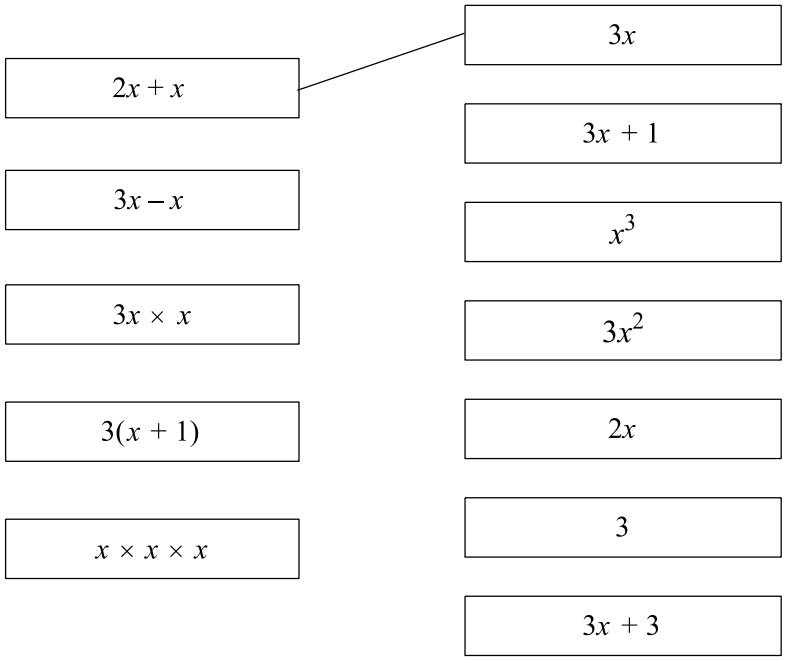
Success:	Target:

Teacher Assessment

Section B Expanding and Simplifying Grade D / C

1. Two sets of algebraic expressions are shown below.

Draw a line from each expression on the left to the equivalent expression on the right. One line has already been drawn.



(Total 4 marks)

2. Simplify the following

(a) $3x + 2x – x$

.....

Answer .....

(1)

(b) $5x + 3y – 2x + 4y$

.....

Answer .....

(2)

(c) $3 \times a \times 4$

.....

Answer .....

(1)

(Total 4 marks)

3. Simplify

(a) $c + 4c + 2c$

.....

Answer .....

(1)

(b) $d \times d \times d$

.....

Answer .....

(1)

(c) $3p + 5q - 2p + q$

.....

.....

Answer .....

(2)

(Total 4 marks)

4. (a) Simplify $6p + 3q - 2q + 3p$

.....

Answer .....

(2)

(b) Multiply out $5(r - 2)$

.....

Answer .....

(1)

(Total 3 marks)

5. (a) Simplify $2x + 3y + 5x - 2y - 4x$

.....

.....

.....

Answer .....

(2)

(b) Multiply out

(i) $4(m - 1)$

.....

Answer .....

(1)

(ii) $p(p + 3)$

.....

.....

Answer .....

(1)
(Total 4 marks)

6. (a) Expand $3(4y + 1)$

.....

.....

Answer.....

(1)

(b) Expand $4x(x^2 + 5)$

.....

.....

Answer.....

(2)
(Total 3 marks)

7. (a) Expand and simplify $4(2x - 1) + 3(x + 6)$

……

……

……

Answer ……..

(2)

(b) Expand $x^2(4 - 2x)$

……

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Answer ……..

(2)
(Total 4 marks)

8. Multiply out and simplify $2(3x + 1) - 3(x - 2)$

.....

.....

Answer.....

(Total 2 marks)

9. Expand and simplify

$$5(2x + 1) - 3(x - 4)$$

.....

.....

Answer .....

(Total 2 marks)

10. (a) (i) Multiply out and simplify $4(x - 2) + 3(x + 2)$

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…….....

Answer .....

(2)

(ii) Multiply out and simplify $(n + 3)^2$

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Answer .....

(2)

(Total 4 marks)

11. Expand and simplify $(x - 3)(x + 1)$

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.....

Answer .....

(Total 2 marks)

12. (a) Simplify

$$10d + 3e - 2d - 7e$$

.....

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Answer .....

(2)

(b) Expand and simplify $(2x - 3)(3x + 5)$

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Answer .....

(3)

(Total 5 marks)

13. Expand and simplify $(4x - 3)(x + 5)$

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Answer .....

(Total 3 marks)

14. Expand and simplify $(3x - 4)(x - 7)$

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Answer .....

(Total 3 marks)

Success:	Target:

Teacher Assessment

Section C Factorising Grade D → A

1. (a) Multiply out $x(x - 7)$

Answer .....

(1)

(b) Factorise $4x - 12$

Answer .....

(1)

(c) Factorise $x^2 - 5x$

Answer .....

(1)
(Total 3 marks)

2. (a) Expand $3(x + 2)$

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Answer .....

(1)

(b) Factorise $6a - 10$

.....

Answer .....

(1)

(c) Factorise fully $6a^2b + 9ab^2$

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Answer .....

(2)
(Total 4 marks)

3. Factorise

(a) $x^2 + 9x + 20$

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Answer .....

(2)

(b) $x^2 - 6x + 8$

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Answer .....

(2)

(Total 4 marks)

4. Factorise $x^2 - 10x + 25$

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Answer .....

(Total 2 marks)

5. (a) Factorise $r^6 - 3r^4$

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Answer .....

(1)

(b) Factorise $x^2 + 5x - 14$

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Answer .....

(2)

(Total 3 marks)

6. Factorise $x^2 + 3x - 40$

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Answer.....

(Total 2 marks)

7. (a) Factorise completely $3x^2 - 6xy$

.....

.....

Answer .....

(2)

(b) Factorise $y^2 - 9y + 14$

.....

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Answer .....

(2)

(Total 4 marks)

8. (a) (i) Multiply out $s(s^2 + 6)$

.....

.....

Answer .....

(2)

(ii) Multiply out and simplify $4(x - 2) + 3(x + 2)$

.....

.....

Answer .....

(2)

(iii) Multiply out and simplify $(n + 3)^2$

.....

.....

Answer .....

(2)

(b) Factorise completely the following expressions

(i) $2a^2 + a$

.....

.....

Answer .....

(1)

(ii) $8x^3y^2 - 4xy^3$

.....

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Answer .....

(2)

(Total 9 marks)

9. (a) Expand and simplify $(x - 3)(2x + 1)$

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Answer .....

(2)

(b) Factorise $x^2 - 7x - 8$

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Answer .....

(2)

(Total 4 marks)

10. Factorise $2x^2 + 3x - 5$

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Answer .....

(Total 2 marks)

11. (a) Factorise fully $6ab^2 - 2ab$

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Answer .....

(2)

(b) Factorise $3x^2 + 5x - 12$

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Answer .....

(2)

(Total 4 marks)

12. Factorise $2x^2 - 7x - 15$

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Answer .....

(Total 2 marks)

13. (a) Write down whether each of the following is an expression (X), an identity (I), an equation (E) or a formula (F).

	X, I, E or F
$v = u + at$	
$3n + 2n \equiv 5n$	
$3x + 2 = 7$	
$4x^2 + 2x - 3$	

(3)

(b) Show clearly that $(a+b)(a-b) \equiv a^2 - b^2$

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(2)

(c) Factorise $p^2 - 100$

……

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Answer ……

(1)

(Total 6 marks)

14. (a) Expand and simplify $(x - 3)(x + 8)$

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Answer .....

(2)

(b) Factorise $h^2 - 25$

.....

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Answer .....

(1)
(Total 3 marks)

15. Factorise

(a) $x^2 - 4$

.....

Answer.....

(1)

(b) $3x^2 - 12$

.....

.....

Answer.....

(2)

(c) $5x^2 - 17x + 6$

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Answer.....

(2)
(Total 5 marks)

16. Factorise fully $2x^2 - 50y^2$

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Answer .....

(Total 3 marks)

17. (a) Factorise $5x^2 + 20x$

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Answer .....

(1)

(b) Factorise $x^2 - 49$

.....

Answer .....

(1)

(c) Factorise fully $(3x + 4)^2 - (2x + 1)^2$

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Answer .....

(3)
(Total 5 marks)

18. (a) Factorise $2n^2 + 5n + 3$

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Answer .....

(2)

(b) Hence, or otherwise, write 253 as the product of two prime factors.

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Answer .....

(1)
(Total 3 marks)

Success:	Target:

Teacher Assessment

Section D Algebraic Fractions Grade A / A*

1. (a) Show that $(x + 2)(x + 3)$ expands and simplifies to $x^2 + 5x + 6$

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(2)

(b) Simplify

$$\frac{x^2+5x+6}{(x+3)^2}$$

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Answer .....

(2)
(Total 4 marks)

2. (a) Simplify $\dfrac{6(x+5)^2}{2(x+5)}$

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Answer .....

(2)

(b) Simplify $\dfrac{x^2 - 9}{x^2 + 3x}$

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Answer .....

(3)

(Total 5 marks)

3. Simplify $\dfrac{x^2 + 5x + 6}{3x^2 + x - 10}$

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Answer .....

(Total 4 marks)

4. Simplify fully

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

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Answer .....

(Total 4 marks)

5. (a) Simplify fully the expression

$$\frac{8x^2 + 24x}{2x^2 + 5x - 3}$$

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Answer .....

(Total 3 marks)

6. Simplify $\frac{3x^2 + x - 2}{9x^2 - 4}$

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Answer .....

(Total 4 marks))

7. Simplify fully $\frac{x^2 - 16}{3x^2 + 10x - 8}$

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Answer .....

(Total 4 marks)

8. Simplify $\dfrac{5x^2+14x-3}{x^2-9}$

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Answer .....

(Total 4 marks)

9. Simplify $\dfrac{2x^2-9x-18}{x^2-36}$

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Answer .....

(Total 4 marks)

10. Prove that $\frac{x+2}{x} - \frac{x-1}{x+1} = \frac{2(2x+1)}{x(x+1)}$

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(Total 4 marks)

Success:	Target: