

Topic 1 Algebra 1 (Pre-TT) [25] MARKSCHEME

1.

$6x \dots$ B1

$+5$ B1

2.

Correct substitution: $Q = 2 \times 3 + 5 \times (-4)$ or -20 seen [M1]

$Q = -14$ [A1]

3.

$7x + 17$

B2

B1 for each term

If final answer incorrect $10x + 5 - 3x + 12$

(with at most 1 error) scores B1

$7x + 17 = 0$ B0 B1

[2]

4.

(a) Expression

B1

(b) Equation

B1

(c) Formula

B1

[3]

5.

$6p^2 + 2pq - 15pq - 5q^2$

M1

For 3 correct terms

$6p^2 + 2pq - 15pq - 5q^2$

A1

Fully correct

$6p^2 - 13pq - 5q^2$

B1 ft

From 4 terms

Do not ignore fw

[3]

6.

Correct substitution: $y = 3 \times (-4) + 2 \times (-4)^2$ or 32 seen [M1]

$V = 20$ [A1]

7.

Fully correct algebra to show given result	M1	for method to find the product of any two linear expressions; eg. 3 correct terms or 4 terms ignoring signs
	M1	for method of 6 products, 4 of which are correct (ft their first product)
	A1	for fully accurate working to give the required result

8.

$2(x + 3)$

B1

[1]

9.

Alternative method 1		
$(x + 3)^2$	M1	oe
$x^2 + 3x + 3x + 9$	A1	oe
$3 \times (x + 3)$	M1	oe
$x^2 + 3x + 3x + 9 + 3x + 9 + 9$ $= x^2 + 9x + 27$	A1	
Alternative method 2		
$(x + 6)(x + 3)$	M1	oe
$x^2 + 6x + 3x + 18$	A1	oe
their $(x^2 + 6x + 3x + 18) + 3 \times 3$	M1	oe
$x^2 + 6x + 3x + 18 + 9$ $= x^2 + 9x + 27$	A1	
Alternative method 3		
$(x + 3)^2$	M1	oe
$x^2 + 3x + 3x + 9$	A1	oe
$3 \times (x + 6)$	M1	oe
$x^2 + 3x + 3x + 9 + 3x + 18$ $= x^2 + 9x + 27$	A1	
Alternative method 4		
$(x + 6)^2$	M1	oe
$x^2 + 6x + 6x + 36$	A1	oe
$3 \times (x + 3)$	M1	oe
$x^2 + 6x + 6x + 36 - 3x - 9$ $= x^2 + 9x + 27$	A1	

10.

(i) $a(2a + 1), (a + 0)(2a + 1)$

B1

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

B2

B1 for $4xy^2(2x^2 + y), 4x(2x^2y^2 - y^3)$

$2xy^2(4x^2 - 2y), 4xy(2x^2y - y^2)$

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

B0 for $2xy(4x^2y - 2y^2)$

[3]