FULL MODEL ANSWERS

Q1. NON-CALCULATOR

Factorise $3n + 12$

$3(n+4)$

(Total for question = 1 mark)

Q2. NON-CALCULATOR

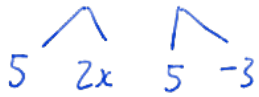
Factorise $4m + 12$

$4(m+3)$

(Total for question = 1 mark)

Q3. NON-CALCULATOR

Factorise $10x - 15$

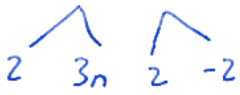


$5(2x-3)$

(Total for question = 1 mark)

Q4. NON-CALCULATOR

Factorise $6n - 4$

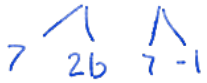


$2(3n-2)$

(Total for question = 1 mark)

Q5. NON-CALCULATOR

Factorise $14b - 7$

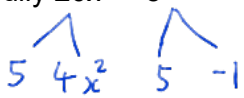


$7(2b-1)$

(Total for question = 1 mark)

Q6. NON-CALCULATOR

Factorise fully $20x^2 - 5$



$= 5(4x^2 - 1)$ Difference of two squares

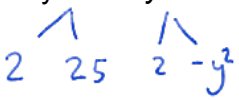
$= 5(4x^2 + 0x - 1)$

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

(Total for question = 2 marks)

Q7. NON-CALCULATOR Difference of two squares

Factorise fully $50 - 2y^2$



$2(25 - y^2)$

$= 2(5+y)(5-y)$

$2(5+y)(5-y)$

(Total for question = 2 marks)

Q8. NON-CALCULATOR

Factorise $m^2 + m$

$m(m+1)$

(Total for question = 1 mark)

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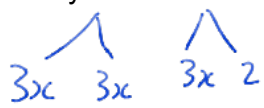
Q9. NON-CALCULATOR

Factorise fully $9x^2 + 6x$

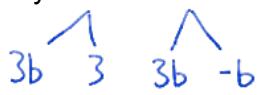


$3x(3x + 2)$

(Total for question = 2 marks)

Q10. NON-CALCULATOR

Factorise fully $9b - 3b^2$



$3b(3 - b)$

(Total for question = 2 marks)

Q11. NON-CALCULATOR

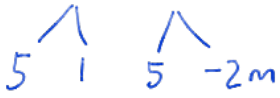
Factorise $y^2 + 27y$

$y(y + 27)$

(Total for question = 1 mark)

Q12. NON-CALCULATOR

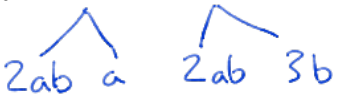
(a) Factorise $5 - 10m$



$5(1 - 2m)$

(1)

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



$2ab(a + 3b)$

(2)

(Total for question = 3 marks)

Q13. NON-CALCULATOR

Factorise $x^2 - 16$

Difference of two squares

$= x^2 + 0x - 16$

$(x + 4)(x - 4)$

(Total for question is 1 mark)

Q14. NON-CALCULATOR

Factorise $a^2 - b^2$

Difference of two squares

$= a^2 + 0a - b^2$

$(a + b)(a - b)$

(Total for question = 1 mark)

Q15. NON-CALCULATOR

Factorise $x^2 - 169$

Difference of two squares

$= x^2 + 0x - 169$

$(x + 13)(x - 13)$

(Total for question = 1 mark)

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Q16. NON-CALCULATOR

Difference of two squares

Factorise $x^2 - 121$

$= x^2 + 0x - 121$

$(x + 11)(x - 11)$

(Total for question = 1 mark)

Q17. NON-CALCULATOR

Factorise $y^2 + 7y + 6$

total of this — factors of this

+6
1 6
2 3
-1 -6
-2 -3

$(y + 6)(y + 1)$

(Total for question = 2 marks)

Q18. NON-CALCULATOR

Factorise $x^2 + 6x + 9$

total of this — factors of this

+9
1 9
3 3
-1 -9
-3 -3

$(x+3)(x+3)$

$(x + 3)^2$

(Total for question = 1 mark)

Q19. NON-CALCULATOR

Factorise $x^2 + 4x + 3$

total of this — factors of this

+3
1 3
-1 -3

$(x + 3)(x + 1)$

(Total for question = 2 marks)

Q20. NON-CALCULATOR

Factorise $x^2 + 3x - 4$

total of this — factors of this

-4
1 -4
2 -2
-1 4

$(x + 4)(x - 1)$

(Total for question is 2 marks)

Q21. NON-CALCULATOR

(a) Factorise $3f + 9$

$3 \times f$ $\quad$ 3×3

$3(f + 3)$

(1)

(b) Factorise $x^2 - 2x - 15$

total of this — factors of this

-15
1 -15
3 -5
-1 15
-3 5

$(x + 3)(x - 5)$

(2)

(Total for question = 3 marks)

Q22. NON-CALCULATOR

Factorise $3(x - y)^2 - 2(x - y)$

$(x-y)$ $3(x-y)$ $(x-y)$ -2

$(x-y)(3(x-y)-2)$

(Total for question = 2 marks)

Q23. NON-CALCULATOR

Josh is trying to factorise $x^2 - 6x + 8$

His reasoning is,

because $4 \times 2 = 8$
and $4 + 2 = 6$

then $x^2 - 6x + 8 = (x + 4)(x + 2)$

(b) Explain what is wrong with Josh's reasoning.

$4+2=6$ not negative 6

Should be $(x-4)(x-2)$

(Total for question = 1 mark)

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