3 (d) (i) Factorise $x^2 + 2x - 24$

24
1 | 24
2 | 12
3 | 8
4 | 6

$+6 - 4 = +2$

$(x + 6)(x - 4)$

(2)

(ii) Hence, solve $x^2 + 2x - 24 = 0$

$x + 6 = 0$ $\quad x - 4 = 0$

$x = -6$ $\quad x = +4$

(1)

(Total for Question 3 is 9 marks)

5 (b) (i) Factorise $x^2 + 8x - 9$

9
1 | 9 → +9 − 1 = +8
3 | 3

$(x+9)(x-1)$

(2)

(ii) Hence, solve $x^2 + 8x - 9 = 0$

$x+9=0$ $\quad$ $x-1=0$

$x=-9$ $\quad$ $x=+1$

(1)

(Total for Question 5 is 5 marks)

6 (b) (i) Factorise $y^2 - 2y - 35$

35

1 | 35

5 | 7

$+5 - 7 = -2$

$(y + 5)(y - 7)$

.....

(2)

(ii) Hence, solve $y^2 - 2y - 35 = 0$

$y + 5 = 0$

$y = -5$

$y - 7 = 0$

$y = 7$

.....

(1)

(Total for Question 6 is 5 marks)

6 Solve $x^2 - 5x - 36 = 0$
Show clear algebraic working.

36
1 | 36
2 | 18
3 | 12
4 | 9

+4 − 9 = −5

$(x+4)(x-9) = 0$

$x+4=0$ $\quad x-9=0$

$x=-4$ $\quad x=9$

.....

(Total for Question 6 is 3 marks)

6

(d) (i) Factorise $x^2 + 9x - 22$

22

1 | 22

2 | 11 → $+11 - 2 = +9$

$(x + 11)(x - 2)$

(2)

(ii) Hence solve $x^2 + 9x - 22 = 0$

$x + 11 = 0$ $\quad$ $x - 2 = 0$

$x = -11$ $\quad$ $x = 2$

(1)

(Total for Question 6 is 8 marks)

7 (b) Solve $x^2 - 3x - 40 = 0$

Show clear algebraic working.

40

1	40
2	20
4	10
5	8

$+5 - 8 = -3$

$(x + 5)(x - 8) = 0$

$x + 5 = 0$ $\quad$ $x - 8 = 0$

$x = -5$ $\quad$ $x = 8$

(3)

(Total for Question 7 is 5 marks)

7 (c) (i) Factorise $y^2 - 2y - 48$

48

1	48
2	24
3	16
4	12
6	8

$+6 - 8 = -2$

$(y + 6)(y - 8)$

(2)

(ii) Hence, solve $y^2 - 2y - 48 = 0$

$y + 6 = 0$ $\quad$ $y - 8 = 0$

$y = -6$ $\quad$ $y = 8$

(1)

(Total for Question 7 is 8 marks)

7

(c) (i) Factorise $x^2 - 2x - 63$

63
1 | 63
3 | 21
7 | 9

+7 −9 = −2

$(x + 7)(x - 9)$

(2)

(ii) Hence, solve $x^2 - 2x - 63 = 0$

$x + 7 = 0$ $\quad$ $x - 9 = 0$

$x = -7$ $\quad$ $x = 9$

(1)

8

(b) (i) Factorise $x^2 - 5x - 36$

36

1	36
2	18
3	12
4	9
6	6

$+4 - 9 = -5$

$(x + 4)(x - 9)$

(2)

(ii) Hence solve $x^2 - 5x - 36 = 0$

$x + 4 = 0$ $\quad$ $x - 9 = 0$

$x = -4$ $\quad$ $x = +9$

(1)

(Total for Question 8 is 4 marks)

8

(b) (i) Factorise $y^2 - 3y - 18$

18
1 | 18
2 | 9
3 | 6

$+3 - 6 = -3$

$(y + 3)(y - 6)$

.....

(2)

(ii) Hence, solve $y^2 - 3y - 18 = 0$

$y + 3 = 0$ $\quad$ $y - 6 = 0$

$y = -3$ $\quad$ $y = 6$

.....

(1)

(Total for Question 8 is 5 marks)

8 (a) (i) Factorise $x^2 + 5x - 24$

24

1 | 24
2 | 12
3 | 8 → +8 − 3 = +5
4 | 6

$(x+8)(x-3)$

(2)

(ii) Hence, solve $x^2 + 5x - 24 = 0$

$x + 8 = 0$ $\quad$ $x - 3 = 0$

$x = -8$ $\quad$ $x = 3$

(1)

9 Solve $x^2 - 21x + 20 = 0$
Show your working clearly.

20
1 | 20
2 | 10
4 | 5

$-1 - 20 = -21$

$(x-1)(x-20)$

$x-1 = 0$ $\qquad$ $x-20 = 0$

$x = 1$ $\qquad$ $x = +20$

(Total for Question 9 is 3 marks)

9

(b) (i) Factorise $x^2 + 5x - 36$

36	
1	36
2	18
3	12
4	9
6	6

$+9 - 4 = +5$

$(x + 9)(x - 4)$

(2)

(ii) Hence, solve $x^2 + 5x - 36 = 0$

$x + 9 = 0$ $\qquad$ $x - 4 = 0$

$x = -9$ $\qquad$ $x = +4$

(1)

(Total for Question 9 is 5 marks)

9 (i) Factorise $x^2 + 2x - 24$

24

1	24
2	12
3	8
4	6

$+6 - 4 = +2$

$(x + 6)(x - 4)$

(2)

(ii) Hence solve $x^2 + 2x - 24 = 0$

$x + 6 = 0$ $\qquad$ $x - 4 = 0$

$x = -6$ $\qquad$ $x = +4$

(1)

(Total for Question 9 is 3 marks)

11 (i) Factorise $x^2 + 9x - 22$

22

1 | 22

2 | 11 $\quad +11 - 2 = +9$

$(x+11)(x-2)$

(2)

(ii) Hence, solve $x^2 + 9x - 22 = 0$

$x+11=0$ $\qquad$ $x-2=0$

$x=-11$ $\qquad$ $x=2$

(1)

(Total for Question 11 is 3 marks)

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11 (i) Factorise $x^2 + 5x - 24$

24

1	24
2	12
3	8
4	6

$+8 - 3 = +5$

$(x + 8)(x - 3)$

(2)

(ii) Hence, solve $x^2 + 5x - 24 = 0$

$x + 8 = 0$ $\quad$ $x + 3 = 0$

$x = -8$ $\quad$ $x = -3$

(1)

(Total for Question 11 is 3 marks)

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