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

$$\begin{array}{r|l}
 & 24 \\
 1 & 24 \\
 2 & 12 \\
 3 & 8 \\
 4 & 6
 \end{array}$$

$+6 - 4 = +2$

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

(2)

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

$$x + 6 = 0$$

$$x - 4 = 0$$

$$x = -6$$

$$x = +4$$

(1)

(Total for Question 3 is 9 marks)

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

$$\begin{array}{r|l} 9 & \\ \hline 1 & 9 \\ \hline 3 & 3 \end{array} \rightarrow +9 - 1 = +8$$

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

(2)

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

$$x+9=0$$

$$x-1=0$$

$$x=-9$$

$$x=+1$$

(1)

(Total for Question 5 is 5 marks)



P 6 8 7 8 9 A 0 7 2 8

January 2022 Paper 1H

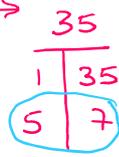
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6 (b) (i) Factorise

$y^2 - 2y - 35$



$+5 - 7 = -2$

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

(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)



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

$$\begin{array}{r|l}
 & 36 \\
 1 & 36 \\
 2 & 18 \\
 3 & 12 \\
 \hline
 4 & 9
 \end{array}$$

$+4-9 = -5$

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

$$\begin{aligned}
 x+4 &= 0 \\
 x &= -4
 \end{aligned}$$

$$\begin{aligned}
 x-9 &= 0 \\
 x &= 9
 \end{aligned}$$

(Total for Question 6 is 3 marks)



P 5 8 4 4 3 A 0 7 2 4

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6

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

$$\begin{array}{r|l}
 22 & \\
 \hline
 1 & 22 \\
 2 & 11
 \end{array}
 \rightarrow +11 - 2 = \underline{\underline{+9}}$$

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

(2)

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

$$\begin{aligned}
 x + 11 &= 0 \\
 x &= -11
 \end{aligned}$$

$$\begin{aligned}
 x - 2 &= 0 \\
 x &= 2
 \end{aligned}$$

(1)

(Total for Question 6 is 8 marks)



P 7 2 7 9 0 A 0 9 2 8

- 7 (b) Solve $x^2 - 3x - 40 = 0$
 Show clear algebraic working.

$$\begin{array}{r|l}
 & 40 \\
 1 & 40 \\
 2 & 20 \\
 4 & 10 \\
 5 & 8
 \end{array}$$

$+5 - 8 = -3$

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

$$\begin{aligned}
 x + 5 &= 0 \\
 x &= -5
 \end{aligned}$$

$$\begin{aligned}
 x - 8 &= 0 \\
 x &= 8
 \end{aligned}$$

(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

$$+6 - 8 = \underline{\underline{-2}}$$

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

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

$$\begin{aligned} y+6 &= 0 \\ y &= -6 \end{aligned}$$

$$\begin{aligned} y-8 &= 0 \\ y &= 8 \end{aligned}$$

(2)

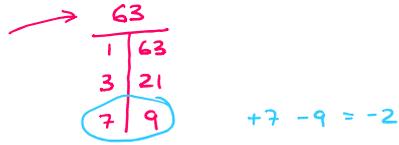
(1)

(Total for Question 7 is 8 marks)



7

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



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

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

$$x + 7 = 0$$

$$x = -7$$

$$x - 9 = 0$$

$$x = 9$$

(2)

(1)

8



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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 $x^2 - 5x - 36 = 0$

$x + 4 = 0$
 $x = -4$

$x - 9 = 0$
 $x = +9$

(1)

(Total for Question 8 is 4 marks)



8

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(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 $y^2 - 3y - 18 = 0$

$y+3=0$
 $y=-3$

$y-6=0$
 $y=6$

.....
(1)

(Total for Question 8 is 5 marks)

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P 7 2 4 3 8 A 0 9 2 8

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

$$\begin{array}{r|l}
 24 & \\
 \hline
 1 & 24 \\
 2 & 12 \\
 3 & 8 \\
 4 & 6
 \end{array}
 \rightarrow +8 - 3 = \underline{+5}$$

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

(2)

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

$$x + 8 = 0$$

$$x = -8$$

$$x - 3 = 0$$

$$x = 3$$

(1)



January 2021 Paper 2HR

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

$$\begin{array}{r|l} 20 & \\ \hline 1 & 20 \\ 2 & 10 \\ 4 & 5 \end{array}$$

$$-1 - 20 = -21$$

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

$$x-1 = 0$$

$$x = 1$$

$$x-20 = 0$$

$$x = +20$$

(Total for Question 9 is 3 marks)



P 6 6 3 0 2 A 0 9 2 4

9

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

$$\begin{array}{r|l}
 & 36 \\
 1 & 36 \\
 2 & 18 \\
 3 & 12 \\
 4 & 9 \\
 6 & 6
 \end{array}$$

$+9 - 4 = +5$

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

(2)

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

$$x + 9 = 0$$

$$x - 4 = 0$$

$$x = -9$$

$$x = +4$$

(1)

(Total for Question 9 is 5 marks)



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

$$\begin{array}{r|l}
 24 & \\
 1 & 24 \\
 2 & 12 \\
 3 & 8 \\
 4 & 6
 \end{array}$$

$+6 - 4 = +2$

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

(2)

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

$$\begin{aligned}
 x + 6 &= 0 \\
 x &= -6
 \end{aligned}$$

$$\begin{aligned}
 x - 4 &= 0 \\
 x &= +4
 \end{aligned}$$

(1)

(Total for Question 9 is 3 marks)

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P 6 5 9 1 8 A 0 9 2 8

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

$$\begin{array}{r|l} 22 & \\ \hline 1 & 22 \\ 2 & 11 \end{array} \quad +11-2 = +9$$

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

(2)

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

$$x+11 = 0$$

$$x = -11$$

$$x-2 = 0$$

$$x = 2$$

(1)

(Total for Question 11 is 3 marks)

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June 2022 P2H

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

$$\begin{array}{r|l}
 & 24 \\
 1 & 24 \\
 2 & 12 \\
 3 & 8 \\
 4 & 6
 \end{array}
 \quad +8 -3 = +5$$

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

(2)

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

$$x+8=0$$

$$x+3=0$$

$$x=-8$$

$$x=-3$$

(1)

(Total for Question 11 is 3 marks)

